THE BUILDER

Incorporating

ARCHITECTURE & THE BRITISH ARCHITECT

THE BUILDER HOUSE, CATHERINE STREET, ALDWYCH, LONDON, W.C.2. Telephones: Temple Bar 6251-2-3-4

VOL. CLXXXVI JANUARY 8, 1954 No. 5786

THIS WEEK'S NEWS

LOOKING FORWARD to the task ahead, when he opened the last house of 1953 *at Barnet on December* 31, *Mr. Harold Macmillan, Minister of Housing, said that in* 1954 *a fresh impetus would be given to slum clearance, the repairing, improving and converting of older houses would be speeded up and work on new housing would continue.* *p.* 43

THE NAMES of architects and others connected with the building industry who were the recipients of New Year Honours are listed on *p.* 44

RECENT ORDERS IN COUNCIL completely revoked Defence Regulation 56*AB and, as a result, it is no longer necessary for anyone wishing to carry on business as a building or civil engineering contractor to have a certificate of registration from the Minister of Works.* *p.* 64

UP TO THE END of November, 1953, 285,274 *permanent houses were completed in Great Britain, according to the latest housing summary.* *p.* 64

MR. R. S. WILLIAMS, MIOB, FRSA, chairman and managing director of Messrs. J. P. Williams, Ltd., has been nominated president of the LMBA for 1954. *p.* 74

THE VITAL IMPORTANCE in 1954 *of avoiding any waste, whether of labour or of materials, is pointed out to Scots local authorities in a circular which has just been issued by the Department of Health for Scotland. A five-point programme to help local authorities to achieve these ends is suggested.* *p.* 76

THE OPERATIVES' WAGE CLAIM

LATER this month the National Joint Council for the Building Industry will be considering a claim put forward by the Operatives' Federation for an increase of ninepence an hour in the basic rates of wages for craftsmen and labourers. This ninepence is in addition to the increase of a penny which will almost certainly fall due under the cost-of-living sliding scale. The operatives are also asking for an amendment to the "guaranteed week" rule; the amendment would eliminate the provision for half payment for the time lost on account of bad weather, plant breakdowns, etc., and would substitute payments at the full hourly rate.

The claim for an increase of ninepence an hour cannot be considered separately from the penny an hour increase under the sliding scale, nor from the claim for a full guaranteed week. It may, therefore, be useful briefly to consider these other two items first. The industry is virtually committed to the cost-of-living increase, and this alone will add between £8 million and £9 million a year to the industry's wage bill. On the basis that the typical local authority three-bedroom house requires on the average some 2,700 man-hours to build, the increase will add about £11 to the cost of this type of house, and it will increase the cost of maintaining existing houses. The effects of the penny increase are not likely to be serious in themselves, but it is one further item in the general tendency to higher building costs.

The proposed amendments to the guaranteed week rule seem to be reasonable. The operative's pay packet ought not, so to speak, to be at the mercy of the weather or other factors beyond his control, and we venture to hope that the National Joint Council will see its way to adopt the proposal for a full guaranteed week of 44 hours, though this could only be on assurances that the unions will satisfy the Council that their members will "play fair" in the matter of interruption of work by inclement weather. The adoption of this proposal would, of course, tend to increase building costs still further, but this is an increase which the industry must face.

We are equally convinced, however, that the claim for a further increase of ninepence is unjustified. It is, of course, natural and understandable that the NFBTO should advance this claim on behalf of its members; the desire for greater wealth is common to most men in whatever walk of life. But it is the responsibility of each member of the community to consider how far he is entitled to press such claims having regard to the effect which they will have on other people. The building trade worker has the responsibility of considering the effect of his claims on the industry of which he forms part and on the public at large. There can be little doubt that an increase of ninepence would lead almost at once to a most serious rise in building costs. It would add, on the operatives' own admission, about £86 million to the wage bill of the industry. It would increase the cost of the average local authority three-bedroom house by about £100, and it would seriously upset the Government's proposals (as embodied in the Housing Repairs and Rents Bill) for the maintenance of existing houses. The Government's rent proposals are based on the Girdwood Committee's index figure which showed that the average cost of house maintenance in Grade A districts in 1953 was 316 as compared with 100 in 1939; a wage increase would raise the index to 352 (or 354 if the penny cost-of-living increase is also included).

The consequences could only be justified if it could be shown that the building trade operatives were unfairly treated compared with other sections of the community. The public generally recognised that the railwaymen had such a case, but the building trade operatives are hardly likely to prove that their position is comparable to that of the railwaymen. The operatives' main arguments are the inadequacy of the present retail price index as a true measure of the cost of living; their conviction that an improvement in status is necessary apart altogether from what they call the "fodder" basis; and their belief that the industry can afford an increase without passing the cost on to the public.

These three arguments are worth looking at in some detail. First, as to the cost of living. Since 1947 when the present retail price index was introduced, there has been a 40 per cent. increase in retail prices; in the same period the wage rates of Grade A craftsmen have risen by 41.7 per cent. and of labourers by 54.1 per cent. But, say the operatives, these wage rates include basic increases of 7d. for craftsmen and 7¾d. for labourers; without these basic increases wages would have lagged behind the retail price index. The operatives would seem to have a valid point here, and one not to be lightly dismissed. But, in our view, it proves no more than that the National Joint Council should seriously consider the adequacy of the present sliding-scale arrangements. It cannot justify the substantial increase in the basic rate which is now being claimed. Moreover, the figures given by the operatives ignore the effect of bonus payments of one kind or another. The basis of the incentives schemes is that they should give "an operative of average ability and capacity a reasonable opportunity to achieve . . . earnings 20 per cent. higher than those yielded by the normal hourly rate." Even where incentive schemes are not in force, it is the almost universal practice to make substantial payments above the normal hourly rate. The operatives admit that such pay-

ments are made, but suggest that these payments show that the industry is able to afford the ninepenny increase; this is, of course, nonsense—clearly, employers would still find it necessary to make these payments even if the increase were granted.

The operatives' second main argument is that they are entitled to a status increase apart from the cost of living. Now, as a newspaper dedicated to the advancement of the building industry, we would naturally sympathise with such a claim. But, on the facts given above, we consider it incontestable that such an increase would do serious harm to the country at large. For the same reason, it would do harm to the industry itself. We may be nearing the point at which any further rise in costs will reduce the demand for building work. In the recurring economic crises of recent years, one of the first things governments (of whatever political colour) have done has been to make cuts in capital investment. Fortunately, these cuts have been revoked before long—but, if costs continue to rise, such cuts might become permanent.

Finally, say the operatives, even so substantial an increase as ninepence an hour need not be passed on to the public, since the industry is well able to afford it. The operatives draw attention to the economies which would be effected by better placing and management of contracts, and to the high wages paid to building workers in the United States. These arguments are worthy of respect, but they do not, in our opinion, substantiate the operatives' claim. In the first place, it is doubtful whether any economies on this substantial scale can be effected in repair and maintenance work, particularly under the present conditions of individual ownership of rent-controlled properties. It may be galling to the operative to think that his claims for higher wages should be rejected because of the need to repair old houses, many of which should be demolished as soon as possible. But the fact remains that these houses have to be kept in occupation for many years to come, and the operatives have to consider the effect of their wage claim on the possibility of making those houses as attractive as possible to live in during the next 10 to 15 years.

As regards new building, there is, of course, no doubt that there is considerable scope for improved methods of organisation in the industry. Equally, there is scope for new methods of production, yet it is the sad fact that the operatives have often shown even less enthusiasm for them than some employers. It is after all only a short time ago that Mr. George Lowthian, of the AUBTW, was bitterly criticising the use of the tower crane. And, whilst it is perfectly true that the American building industry succeeds in carrying very high wages, it is equally true that Sir Richard Coppock had some forceful criticisms of the report of the team which visited the USA under the Anglo-American productivity council; some of those criticisms were fairly cogent, but the operatives cannot have it both ways. In any event, there seems little likelihood of an overnight revolution in building practices which would offset the immediate effects of a ninepenny increase. And, moreover, we hope that any such improvements in building practice would be reflected in lower costs to the public, rather than higher wages. The time is fast coming when the people of this country must seriously consider whether their interests are best served by a high cost economy. The advancement of living standards in the future may depend more on lower costs and prices than on ever increasing money wages. We do not mean to suggest that the employers should just reject the claim for ninepence and complacently sit back. We suggest most earnestly that both employers and operatives get together in a common effort to improve the efficiency of this great industry. They have already done a certain amount in this direction, but there is much more that they can do. In the meantime, the operatives must face the inescapable fact that increased earnings must be yoked to increased production.

THE PROBLEM OF THE UNQUALIFIED

REGISTRATION has done much to improve the status of architects and to ensure better standards of architecture, but a disconcerting amount of building work is still carried out from the "designs" of unqualified persons. It was never, of course, expected that the present Registration Acts would prevent this. The Report of the Committee on Private Architectural Practice by Unqualified Persons, just issued by the RIBA, the recommendations from which are printed elsewhere in this issue, states that the volume of such work varies between as much as 50 per cent. of all plans submitted to local authorities in rural areas down to 10 per cent. in the bigger urban areas, but it seems that though the number of submissions is considerable the size of individual projects is small.

It has often been argued that this condition of affairs can only be rectified by restricting to registered architects the right to submit plans. This would mean legislative action to extend the provisions of the Architects' Registration Acts, but it is very doubtful whether the public, Parliament itself or the kindred professions would be prepared to make such a radical concession to the profession of architecture. Nor is it a practicable suggestion that local authorities should withhold approval from plans submitted by unqualified persons, for they have no statutory power to do so.

For the time being at least, greater use will have to be made of "public relations," particularly at regional and local levels, to secure any improvements, and the report to which we have referred makes many useful suggestions in this connection. The most practicable, it would seem, is that planning officers who complain of the large proportion of plans submitted to them which are unsatisfactory and have to be amended should be advised to reject them and recommend each applicant to consult an architect with a view to their revision. Other suggestions include better Press publicity, exhibitions, contacts with those in positions of influence, improved liaison between architects and builders, and an approach to the building societies to discuss the fuller employment of architects in the design of private houses built with their assistance and the possibility of the societies including professional fees in the sums lent on mortgage.

All these recommendations have been favourably considered by the Council of the RIBA, who have also endorsed the suggestion that members should not assist unqualified persons by "covering or sponsoring" their plans.

The Public Relations Officers of the Allied Societies' Branches and Chapters, on whom a good deal of the suggested propaganda work will fall, clearly have a busy time ahead, and they should have much to discuss when they meet, as it is suggested, in about eight or ten months' time. One of the most thorny subjects is that of fees which, in our view, was not dealt with as well as it might have been in the "Before You Build" pamphlet issued by the Institute last year. Fees are of primary importance to many intending building owners, particularly the smaller ones with limited capital, who are often blind to the fact that architectural services, though they may add something to initial cost, are in the long run a sound investment.

Another matter of some importance, to which no reference is made in the report, is the great increase in prefabricated buildings, some of which are needlessly unattractive. This is a class of building in which the services of the architects could obviously be more fully employed, and PROs, if they have not already done so, would be doing useful work by establishing liaison with local manufacturers.

But the ultimate task is one not only for public relations officers but for all who are concerned with the architectural repute of our country; it is to make the qualified profession so strong and its capacity and purpose so well known that good design in all classes of building work will come to be accepted as indispensable by an enlightened community.

NOTES & NEWS

NEW YEAR HONOURS

THE BUILDING INDUSTRY and the arts come well out of the New Year Honours. There will be great satisfaction at the knighthood conferred on Mr. Edward Maufe who, in his long professional life, has made an unsurpassed contribution to the sum of fine architecture in Great Britain; much that is great and nothing that is unworthy has come from his hand. Sir Thomas Bennett's unremitting and inspiring work for Crawley New Town is recognised by a KBE. Further recognition of the work done by the architectural profession for the New Towns is seen in the CBE well earned by Mr. Frederick Gibberd, FRIBA, consulting architect for Harlow. Mr. Epstein receives a knighthood for his services to sculpture; the wheel has indeed turned far since the outcry for the removal of his figures from the British Medical Association building in the Strand (now New Zealand House), where Messrs. Adams and Holden gave him his first big opportunity.

Recognition of the remarkable efforts made by the British cement industry is seen in the knighthood bestowed on Mr. George Earle, chairman of the Associated British Portland Cement Companies, who has recently returned from a world tour of his associated companies. The CB conferred on Mr. J. H. Forshaw, FRIBA, is a fitting recognition of his services to architecture, first in the Miners' Welfare Commission where he set up a standard of design for pithead baths and welfare buildings which commanded universal appraisal; next, as architect to the LCC (where he made a contribution to planning of the first importance); and lastly, as Chief Architect to the Ministry of Housing where he has succeeded in lifting perceptibly the standard of design, planning and layout of much local authority housing; the successful completion of the Government's programme of 300,000 houses could have been marked in no better way. Likewise the OBE awarded to Mr. Arnold Marsh is a well-deserved tribute to his work over so many years for the National Smoke Abatement Society.

Other awards are noted on page 44, but mention may here be made of the CBE given to Mr. Alan Pitt Robbins, lately News Editor of *The Times*. Mr. Robbins throughout his long period of service with our greatest newspaper, has been an unfailing friend to architecture and building, and the distinction conferred on him will give much satisfaction throughout the building industry.

Mr. Edward Maufe, RA, who received a knighthood in the New Year Honours (*see note*).

THE 310,000TH HOUSE

THERE WAS clearly nothing special about the last new house of 1953 which Mr. Harold Macmillan, Minister of Housing, opened at Mays-lane, Barnet, on the last day of the year. It was, however, as the Minister remarked, symbolic of all the houses built in that year by local authorities and private enterprise.

The bitingly cold wind which cut through the small crowd gathered round the doorstep of this 310,000th house, had no effect on the warmth of Mr. Macmillan's praise for the combined efforts of those who make up the housebuilding industry. The achievement of 1953 seemed all the more remarkable when the Minister announced that we had built well over 100 houses for every working hour of the year; "a good round figure" as he described it.

Looking forward to the task ahead, Mr. Macmillan said that a new assault on the housing problem would be made in 1954. A fresh impetus would be given to slum clearance, the repairing, improving and converting of older houses would be speeded up and work on new housing would continue.

"We are entering the most vital housing year since the war," the Minister continued. "Grateful as I am to everyone connected with the building efforts of 1953, I call for a new great effort in 1954, to tackle the problem of our older houses while continuing to build the new. If you wish to make new resolutions I suggest you include these:—'Uproot the slums,' 'Repair the sound houses,' 'Put new life into the older houses,' and 'Keep up new building.'

"We can do no more than start some of these tasks in 1954, but, provided that we do not relax, we shall within a few years make Britain a far better place to live in."

COMING EVENTS

MONDAY, JANUARY 11

RIBA.—Library Group meeting on identification of unknown drawings in Library. 66, Portland-place, W1. 6 p.m.

TUESDAY, JANUARY 12

INCORPORATED INSTITUTE OF BRITISH DECORATORS AND INTERIOR DESIGNERS.—"Sir Christopher Wren and His Craftsmen," by Mr. Martin S. Briggs, FRIBA. Royal Society of Arts, John Adam-street, WC2. 6.30 p.m.

RICS.—"Planning Control — Some Industrial Experiences," by Mr. P. D. H. Stock. 12, Great George-street, SW1. 5.30 p.m.

ILLUMINATING ENGINEERING SOCIETY.—"Studies in Interior Lighting," by Mr. J. M. Waldram. 2, Savoy Hill, WC2. 6 p.m.

WEDNESDAY, JANUARY 13

INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS.—Symposium on new Model By-laws. Old Ship Hotel, Brighton. 7.15 p.m.

ROYAL SANITARY INSTITUTE.—Discussion on "Slums: Clearance and Improvement." 90, Buckingham Palace-road, SW1. 2.30 p.m.

LMBA (CENTRAL AREA NO. 1).—AGM preceded by luncheon. Derry and Toms' Restaurant, Kensington High-street, W8. 1 p.m.

VICTORIA AND ALBERT MUSEUM.—"English Gothic Alabaster Carvings," by Dr. W. L. Hildburgh, FSA. V. and A. Museum, South Kensington, SW7. 6.15 p.m.

THURSDAY, JANUARY 14

INSTITUTION OF STRUCTURAL ENGINEERS.—"Soil Stabilisation of Fine Materials," by Mr. S. J. Crispin, LRIBA. 11, Upper Belgrave-street, SW1. 5.55 p.m.

INSTITUTE OF HOUSING.—Three short papers to be given by Associates of the Institute. County Hall, SE1. 7 p.m.

FRIDAY, JANUARY 15

MINISTRY OF WORKS.—"Colour in Industry," by R. F. Wilson. Portland Hall, Little Titchfield-street, W1. 7.15 p.m.

POST-WAR EUROPEAN CHURCHES

THREE SWISS CHURCHES, one French, one Danish and one British, are included in a list of the six most outstanding churches built in Europe since the war, published in the December number of the *Architectural Forum*. Of the British example, the Trinity Congregational church, Lansbury, London, Mr. G. E. Kidder-Smith says: "The design is based on a concrete frame—a kind of 20th-century flying buttress from which the roof is suspended. Business-like dignity rather than inspiration is the keynote." The church, designed by Messrs. C. C. Handisyde and D. Rogers Stark, AA.RIBA, was illustrated in *The Builder* of August 17, 1951.

RIBA DINNER

TO AVOID limiting the number of guests which each member may bring, the RIBA Dinner is to be held at Grosvenor House, W1, this year. The date is February 19 and the time 7 p.m. for 7.30 p.m. Applications for tickets (price 32s. 6d.) should be made to the RIBA as soon as possible.

THE ROYAL GOLD MEDAL

AS ALREADY ANNOUNCED, Her Majesty the Queen will be presenting the Royal Gold Medal for Architecture for 1954 to Mr. Arthur George Stephenson, CMG, MC, FRIBA, AMTPI, during her visit to Melbourne. In consequence, the general meeting arranged at the RIBA for April 6 next has been cancelled.

RIBA LIBRARY GROUP

THE NEXT MEETING of the RIBA Library Group will take place on January 11, at 6 p.m., at the RIBA, 66, Portland-place, W1. The evening will be devoted to the identification of unknown drawings in the possession of the library.

SIR CHRISTOPHER WREN

A LECTURE is to be given by Mr. Martin Briggs, FRIBA, on "Sir Christopher Wren and His Craftsmen," at the Royal Society of Arts, John Adam-street, Adelphi, WC2, on January 12. This has been arranged by the Incorporated Institute of British Decorators and Interior Designers, and the chair will be taken by Mr. C. R. Dickson, FIBD, president of the Institute.

MOW APPOINTMENTS

AS FROM JANUARY 1, Mr. Tom Brockie has relinquished his post as head of the Export Division of the Ministry of Works. He is succeeded by Mr. A. W. T. Ellis who will have as deputy Mr. J. Isaac.

Mr. Brockie, who leaves to engage in work of a special nature, takes with him the affectionate good wishes of those many members of the building industry who are exploring or developing the export markets. Knowledgeable, forthright and immensely patient, his encouragement as much as the solid help which was always forthcoming have been of the greatest assistance to the industry over the post-war years. They wish him, as well as his successor, all good fortune.

Congratulations are also due to Mr. R. W. B. Howarth, who took over on January 1 the post of Chief Information Officer, MOW, recently relinquished by Mr. B. P. Barker, OBE, who has taken up a commercial appointment.

THE OXFORD SCHOOL

MR. REGINALD W. CAVE, ARIBA, vice-principal of the Hammersmith School of Building, and head of its department of architecture, structural engineering and surveying, is to return to Oxford as head of the school of architecture and building in the College of Technology, Art and Commerce, where he was formerly senior lecturer. Mr. Cave, who succeeds Mr. J. R. Tolson, FRIBA, was awarded the RIBA Victory Scholarship in 1939.

FAS PRESIDENCY

MR. GEORGE C. FOX has been re-elected president of the Faculty of Architects and Surveyors and the Faculty of Surveyors of England. Mr. N. James Rushton, FFAS, LRIBA, has been elected vice-chairman of the executive council and president-elect.

PROFESSIONAL ANNOUNCEMENTS

MR. H. DESMOND HALL, ARIBA, wishes to announce that the firm of Messrs. Burgess, Holden and Watson, chartered architects and surveyors, of Beaconsfield, Buckinghamshire, will continue under his direction.

MR. C. E. SMART, FIQS, MIBE, quantity surveyor, has moved his London office to Imex House, 42, Theobalds-road, WC1 (tel.: Holborn 2972).

MESSRS. HAWKES AND HAWKES, quantity surveyors, announce that from to-day (January 8) their address will be 2, Gray's Inn-square, London, WC1 (tel.: Holborn 8513-4—unchanged).

MR. DOUGLAS J. VAUGHAN, quantity surveyor, announces that his new offices are at 4, The Broadway, Hammersmith, W6 (tel.: Riverside 2113).

The practice of Messrs. Banks, Wood and Gibson, quantity surveyors, of Gloucester House, 19, Charing Cross-road, London, WC2, will henceforward be carried on at the same address by MR. G. C. BANKS, FIAS, MR. B. R. WOOD, FRICS, FIAS, and MR. J. E. NEARY, ARICS, under the style of Messrs. Banks, Wood and Partners.

FROM "THE BUILDER" OF 1854

Saturday, January 7, 1854

LAYING PIPE-DRAINS.—Lately visiting some work of this description I am employed on, I found the clerk of the works allowing the junctions of 4-in. with 9-in. pipes to be made, by inserting a length of 6-in. between them, wedging it at the ends with bits of brick, and cementing it over. The traps were being done in brickwork. The reason given me, when I accidentally discovered the workmen in the act, was, "There was difficulty in obtaining traps and junctions of the sizes required." If I had not fortunately discovered this mode of executing the work, of course any failure would be attributed to the pipes. I believe this may serve as a hint as to where the cause of failure may in many cases rest.—R.H.P.

NEW YEAR HONOURS

FOLLOWING is our list of recipients of the New Year Honours approved by the Queen:

KNIGHTS BACHELOR

G. F. Earle, CBE, chairman, Associated Portland Cement Manufacturers, Ltd.

H. J. B. Manzoni, CBE, City Engineer and Surveyor, Birmingham.

Edward B. Maufe, FRIBA. For services to the Imperial War Graves Commission.

CB

A. J. Filer, Under-Secretary, Ministry of Works.

J. H. Forshaw, FRIBA, Chief Architect and Housing Consultant, Min. of Housing and Local Govt. and Min. of Health.

KBE

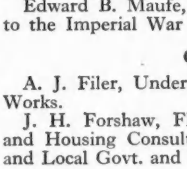
Sir Thomas P. Bennett, CBE, FRIBA, Chairman, Crawley Development Corporation.

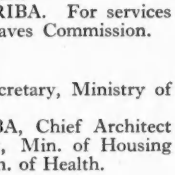
Jacob Epstein, Sculptor.

CBE

J. T. A. Brooks, Chief Quantity Surveyor, MOW.

H. W. Coales, OBE, MC, Deputy Chief Engineer, MOHLG.





Mr. G. F. Earle (Knight) and (right) Mr. Frederick Gibberd (CBE).

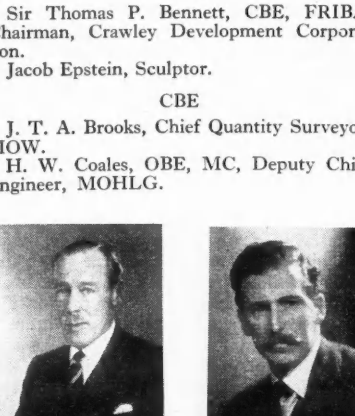
Ald. F. W. Dean, JP, DL. For polit. and publ. services in St. Marylebone.

Frederick Gibberd, FRIBA, Architect and Town Planning Consultant.

R. D. Gwyther, MC, sen. ptnr., Coode and Partners, consulting and civil engs., London.

OBE

A. V. Dalzell, Sec.-Dir., Federated Quarry Owners of Great Britain.



Mr. J. H. Forshaw (CB).

Sir Thomas Bennett (KBE).

K. S. Dodd, MC, Dep. Chief Hsg. and Plng. Insp., MOHLG.

Peter Gilchrist, JP, Prin., Bangor Tech. Sch., Co. Down.

A. W. Graham, LRIBA, Sen. Arch. and Svyr., Dept. of Agric. for Scotland.

Richard Holt, MM, Asst. Reg. Dir., MOW.

W. Johnstone, Prin., LCC Cen. Sch. of Arts and Crafts.

Ian Murray Leslie, JP, Hon.ARIBA, Editor, *The Builder*.

A. C. Manuel, ARIBA, Asst. Chief Arch., MOW.

Arnold Marsh, Dir., National Smoke Abatement Society.

W. W. Sapcote, Man. Dir., William Sapcote and Sons, Ltd., Reg. Ldr., Works and Bldgs. Emergency Orgn., Birmingham.

W. D. Simpson, chrmn., Ancient Monuments Bd. for Scotland.

S. H. Stevenson, lately Arch.-in-Chief, South Australia.

A. G. Tarrant, Sen. Prin. Offr., Road Research Laboratory, DSIR.

H. C. Vogt., Asst. Dir. of Contracts, Air Ministry.

MBE

W. E. W. Bacon, QS, War Office.

H. J. Clark, Sen. Tech. Offr., MOW.

F. B. Dryburgh, Cty. Svyr., Zetland.

J. R. Edwards, FRIBA. For arch. services in S-W England.

R. V. Hayman, LRIBA. For services to the Glamorgan Police Authy.

J. W. Higgs, Div. Sec., AUBTW.

W. R. Ingram, lately Supt. of Works, MOW.

A. F. Insch, Chief COW, Aberdeen.

Clarence Renwick, Supt. of Works, Windward Islands.

W. J. Sergent. For services to Nat. Savings movement in Liverpool.

F. W. A. Waterson, Sen. Contract Offr., Admiralty.

BEM

S. Cogman, Prodn. Man., Wire Netting Dept., Boulton and Paul, Ltd., Norwich.

C. S. Cole, Foreman of Works, West Africa Command, War Office.

H. S. Evans, Carpenter, s.s. "Ixion," Alfred Holt and Co. (Liverpool).

Harry Hallam, Brick Moulder, G. Tucker and Son, Ltd., Loughborough.

Arthur Huish, Charge-hand Carpenter, C. W. Addicott and Son, Weston-super-Mare.

Thomas Jarratt, Lding. Arch. Asst., War Office (Wembley).

Walter Langley, Mason, Rutland Masonry Works, Ltd., Peterborough.

P. J. Lethbridge, QS's Asst., War Office (Rudgwick, Suffolk).

CORRESPONDENCE

NOMINATED SUB-CONTRACTORS

To the Editor of *The Builder*

SIR,—We would refer to your most excellent article relating to Nominated Sub-Contractors, arising out of the decision of the High Courts on the recent case of this company v. Tout and Finch, Ltd., in liquidation.

You have placed the matter before all parties with great clarity, and it is to be hoped that the result will improve contractual relationships, and that all interested parties will now work to this end.

It has long been the opinion of this company that we held a duty to our clients to provide a service second to none, and to give the best price possible on all and every occasion. This could not be fully achieved unless we were able to establish our rights to be paid monies due to us for work done under the existing contractual procedure.

W. R. HOWARD, Managing Director,
The Helical Bar and Engineering Co., Ltd.
82, Victoria-street, SW1.

AN INSTITUTE OF BUILDERS' EXAMINATION

To the Editor of *The Builder*

SIR,—This company has recently been witness to an experience of one of its apprentices, which we think should be given due publicity, as we consider the treatment accorded is highly unsatisfactory.

The relevant facts are that a surveyor apprentice under an approved indenture, after attending Technical College for the appropriate period and taking the appropriate courses, asked to be allowed to take the Institute of Builders' examination before entering the Army, and this would have involved his deferment a matter of a few weeks. The Ministry of Labour, which granted the necessary deferment to permit this boy to take a Higher National Certificate, would have granted the necessary facilities had they received the endorsement of the Institute of Builders. Application to this body, however, has produced a most unsatisfactory result. For reasons which they refuse to make known, they declined to give this youth an opportunity to sit for the examination on obscure grounds quite undefined, and, as near as one can judge, considered it would be better for him to have another year's education. That is to say, it would mean that he would have to wait until he came out of the Army, and then start all over again.

This would, perhaps, have been quite understandable had the boy been of average or sub-average intellect. It is, however, interesting to note that the boy in question was of much higher intelligence than normal, and had already been the subject of much praise and the award of a prize by the Technical College in previous years, and the matter was made all the more strange by the fact that other boys of no greater experience or better class order were permitted to take the Institute of Builders' examination.

This matter was duly taken up with the Institute of Builders by the student's teacher, who was very high in his praise for the boy and was quite satisfied as to his ability to sit and meet the requirements of the examination; a letter was also addressed by the writer to the Secretary of the Institute. All correspondence has met with an extremely high-handed "we-know-best attitude" which is quite beyond comprehension.

The matter has been further pursued as far as practicable by appropriate Associations, and it would appear that the Institute having taken up a particular line there is no redress on the part of the student, who is naturally very discouraged that he should be prevented from taking the examination which has been his "goal" for so many years, and he is disinclined to start again at the end of his military service.

It is now much too late to undo anything that has been done, but it is interesting to note that the boy in question has now been awarded a £10 prize as being an outstanding management student by the Midland Federation of Building Trades Employers under their Regional Prize Award Scheme of 1953. The Institute of Builders have been advised of this, and now refuse to conduct any correspondence either with the student's teacher or this company.

I seem to remember that it was not so long ago since there was a leading article in your publication which pointed out the need for encouragement for boys in the industry and in this capacity, and it would be interesting to hear whether similar experiences have occurred elsewhere, and if the example set forth is typical of the autocratic minds which appear to work within the Institute of Builders, which appear to be designed to limit the entry of suitable students and would not appear to be serving the function for which one would assume they were originally designed. Certain is the fact that this company will not sponsor any further boys for this examination, though it will, of course, continue to do everything in its power to train further student surveyors to the best of its ability.

Let us hope that the Institute will at least be prepared to give in public their reasons for denying this youth the right to sit for their examination.

HAROLD FORD, Managing Director,
Rexford (Builders), Ltd.
Shirley, Birmingham.

"BUILDING WITHOUT GRACE"

To the Editor of *The Builder*

SIR,—I was delighted to read the extract in your columns (December 18) of Mr. Siegfried Charoux's excellent paper which he read at the RIBA recently—"An Aggressive Examination." It was, and how appropriate! "A girder garnished with a balance sheet," he suggests, might be a symbol of our modern architecture!

It must be agreed, I think, that all he said was very true; my only slight disagreement with him arises from his reference (and that I may have possibly misread) to "the Hertfordshire scheme, by which a small percentage of the total sums for building is devoted to sculpture and mural painting." This percentage business for "art" to me savours rather of the client's notion of calling in the "decorator" when the walls and roof, not forgetting the *drains*, have been "done" by the architect.

"What with Funfairs at Battersea and Prefabs in the Parks, it's a treat to find a bit of unimpeded open space!"

Ruskin, in a lecture to the Architectural Association in 1857, said: "Architecture is doing anything that is easy, and sculpture anything that is difficult" [*sic*]. He then instanced the pulpit of Niccolo Pasano in the Baptistry at Pisa as a famous example to illustrate this statement, saying that the seven (? five) rich "relievi" are the difficult parts of the pulpit design. How much more appropriate is this remark to-day when we think of virtually nothing but straight lines in our designs for buildings, and then call in the clever sculptor and/or the mural painter at the "eleventh hour" to get us out of the mess!

I do also agree with Mr. Charoux's remarks about the Vienna flats which were so spaciously and sympathetically designed, and well constructed. The building itself is the main thing—not just a mural, as to-day we often see in an entrance hall, or the piece of added sculpture on a wall that looked so lifeless, put in to relieve the harshness of the design.

Sympathetic and imaginative architectural treatment are surely the first essentials of a fine building's design, if it is not to "date" quickly. The percentage for "art" Mr. Charoux speaks of in a building contract smacks of a building committee's suggestion of perhaps just a little art for art's sake, blindly forgetting that the percentage insisted upon should be the amount of the contract, and not just a small percentage.

A. NEVILLE HOLT [FRIBA].
20, Exchange-street East, Liverpool.

(*Correspondence continued on page* 61.)

"Honour Your Forbears"

Mr. John Betjeman's Address at the RIBA

"HONOUR YOUR FORBEARS" was the title chosen by MR. JOHN BETJEMAN for his address at the RIBA last Tuesday evening, and which we reproduce below in slightly abridged form. The President, Mr. Howard Robertson, ARA, was in the chair. Mr. Betjeman said :

Architects have always been a large proportion of my greatest friends. How many glasses of sherry did I enjoy with old Mr. Voysey in the Arts Club, when he was being hailed, much to his disgust, as a pioneer of the modern movement ! When I used to connect his name with George Walton and Charles Rennie Mackintosh, his kind old face screwed up with distaste, he would say, "We used to call them the Spook School." And indeed the domestic architect he most admired was Norman Shaw, whom Lutyens himself described as our greatest architect since Wren, if not greater. The only contemporary architect Mr. Voysey admired was Sir Ninian Comper, who is still with us ; and I remember an historic dinner in Hatchett's Restaurant when I brought those two together with that superb writer and Old Harrovian, John Summerson, as a fourth.

A GREAT INDIVIDUALIST

Through Mr. Voysey I became a brother of the Art Workers' Guild, and through that met such men as C. R. Ashbee, Harry Redfern and F. W. Troup. When I married I was a floating adventurer with no permanent address and old Mr. Baillie Scott and his wife allowed me to use their house in Kent as a registered address. Baillie Scott—it is a name coming back into its own. I remember how that delightful, humorous and modest architect was so proud of what was once written of his work—"No man has built more and done less damage to the English landscape than Baillie Scott." Last among my friends, but often first in my thoughts, is Sir Ninian Comper, the church architect—let me advise you to step into St. Cyprian's, Baker Street (1900), after this meeting, or to visit St. Phillip's, Cosham, Carshalton Parish Church, or St. Mary's, Wellingborough, before dismissing this sensitive artist as a mere hangover from the Gothic Revival. Comper, dear members of the Institute, is not a member of your RIBA. He is not even registered. He does not hold with architectural schools, but with the system of articled pupils. He does not belong to your Institute because he disapproves of professionalism as did Bodley, Street and Norman Shaw and Butterfield before him. I hope you will think none the worse of him for such individualism as that. There is something delightfully ironic and English in the fact that though he puts after his name in *Who's Who* "architect (not registered)" and is therefore liable to a fine of £100, King George VI knighted him as an architect. And many members of your Institute who put art in front of professionalism were delighted by the honour conferred on him in well over his eightieth year.

Honour Your Forbears ! What is it that these architects whom we admire in the past and whom some of us have had the privilege of knowing, what is it that they have in common? To walk with an architect through the streets of London is one of the pleasures I most enjoy. He will stand with you in front of some building and say, "That's old So-and-So's job. I don't like the way he always overemphasises his dormers and he seems to have gone to pieces over his ground floor. I mean look at that front door, I suppose he thought he was being like Norman Shaw, but it's a long way off, isn't it ? Oh, I grant you he was a good planner, probably kept within his estimates. I wonder if you know the little bank he did at such and such a place. I think it's his best work. Poor fellow, he died of drink. But in my time he was regarded as Beresford Pite's best pupil." There we have biography, criticism and observation all mixed up. How much pleasanter and more informative it is than all this depersonalised stuff about trends and motifs and economics to which so many architectural critics treat us to-day.

I see that I have not yet answered the question, what have these men in common. I think the chief thing they have in common with all the best architects is a sense of proportion. This quality runs through all good architectural work. It appears not only in the plan of a building, bedrooms being related to living rooms, or the chancel to the nave, or the administration block to the workshops. It appears in the building itself, in relation of window to wall space, in moulding and in decoration.

MOULDING AND SKYLINE

Mouldings too have to be in proportion with a building. Though I hardly dare to say so, it has long seemed to me that mouldings on the exterior of St. Paul's Cathedral are inadequate to the building: though Hawksmore's mouldings and rustications on his Church of St. Mary Woolnoth in the City give a satisfying monumentality to that little building which is lacking in St. Paul's. Compare, too, the perfect moulding of any of Bodley's churches with the fussy overelaboration caused by injudicious use of moulding in, let us say, that office building Sir Gilbert Scott designed as an entry to Dean's Yard, Westminster. Or compare where they stand side by side for you to see them, the ponderous complication of Sir Edwin Cooper's Port of London Authority Building in the City and Sir Edwin Lutyens' simple and graceful memorial to the Merchant Navy in Trinity-square. Or look at Ralph Knott's feeble chimneys and cupola of County Hall and compare them with the skyline of Shaw's Scotland Yard opposite. Look at Shell-Mex House as an outline compared with St. Paul's dome. And I would stretch the subject of proportion to include neighbourliness in street architecture. Have a look at your old Institute building in Conduit-street, and compare it with its new neighbour. Notice how often new buildings pay little regard to their neighbourhood and suffer under the dictation of standardised metal windows and niggardly committee taste.

Finally, proportion involves a sense of humour. I often think the reason why architects are such delightful company is because they have a sense of humour, and a sense of humour is really a sense of proportion. It is being able to see how some things juxtaposed with others are ludicrous. And what joke is funnier than an architectural joke? Have you ever stood on the corner of Vigo-street and looked across Regent-street to where Sir Reginald Blomfield's quadrant building abuts on Brewer-street? Just notice his roof arrangement. Then there are more spontaneous jokes like Sicilian-avenue in Southampton-row and that extraordinary building in Buckingham-gate known as Palgrave's Golden Treasury.

But though I can enjoy most architectural jokes, I do not think I will ever enjoy the ill-proportioned arrogance of things like the Odeon in Leicester-square, the Air Terminal at Victoria and some of the new office blocks appearing in the City and West End. I often think how terrible it will be if after some disaster nothing survives of London except those factories along the Great West-road.

THE FIRST ESSENTIAL

Proportion is the first thing in architecture. I don't think there are defined rules about it, applicable everywhere and to any style. I think it is a gift like an ear for music, and I think it requires humility, humour and a constant looking at buildings for anyone to understand it.

I have been talking here of consciously planned streets in the Renaissance tradition, but I would remind you that there is in England a sort of unconscious sense of neighbourliness and proportion which has gone on for centuries. All of you must have some favoured village or some High-street of an old English town whose subconsciously planned charm is part of yourselves. Not until a row of too large council houses—out of scale and out of texture but quite up to the by-law requirements—is introduced into the village street, or a glaring new glass façade of a chain store or an unwieldy commercial block is introduced into the High-street of your old town, do you realise how that harmony has been disturbed. You were unaware, till the crime was committed, that there was harmony.

There are three other things connected with architecture which my perambulations with architects have taught me—texture, outline and movability.

The first two are something especially to do with our climate and our own architecture. I think those who imagine that there is such a thing as an international style created by industrialisation—an architecture of space ships and aeroplanes anchored to the earth or standing on their heads on the landscape—are unpractical romantics. Corbusier has long seemed to me a poetic romantic who invents a

theory and packs his people into it. Mackintosh and George Walton before him were romantics. Their simple Beardsley-esque Scottish baronial was a search after a new style and they based things on a simplification of the old Scottish castles. Because they were artists, their work has distinction. But in the hands of the literal and unoriginal Teutons who took it up before 1914 and called it "Mackintoshismus" it came back to us as the rootless commercial flashiness we see in Odeons and chain-store façade to-day. In origin, it was a preoccupation with style, an attempt to escape from Gothic or Renaissance. It has brought its own curse, because it did not go deep enough.

There is no such thing as an international style. Salvation lies in regionalism. We have put money first and proportion, texture and outline—so essential to our architecture—second.

REGIONALISM AND TEXTURE

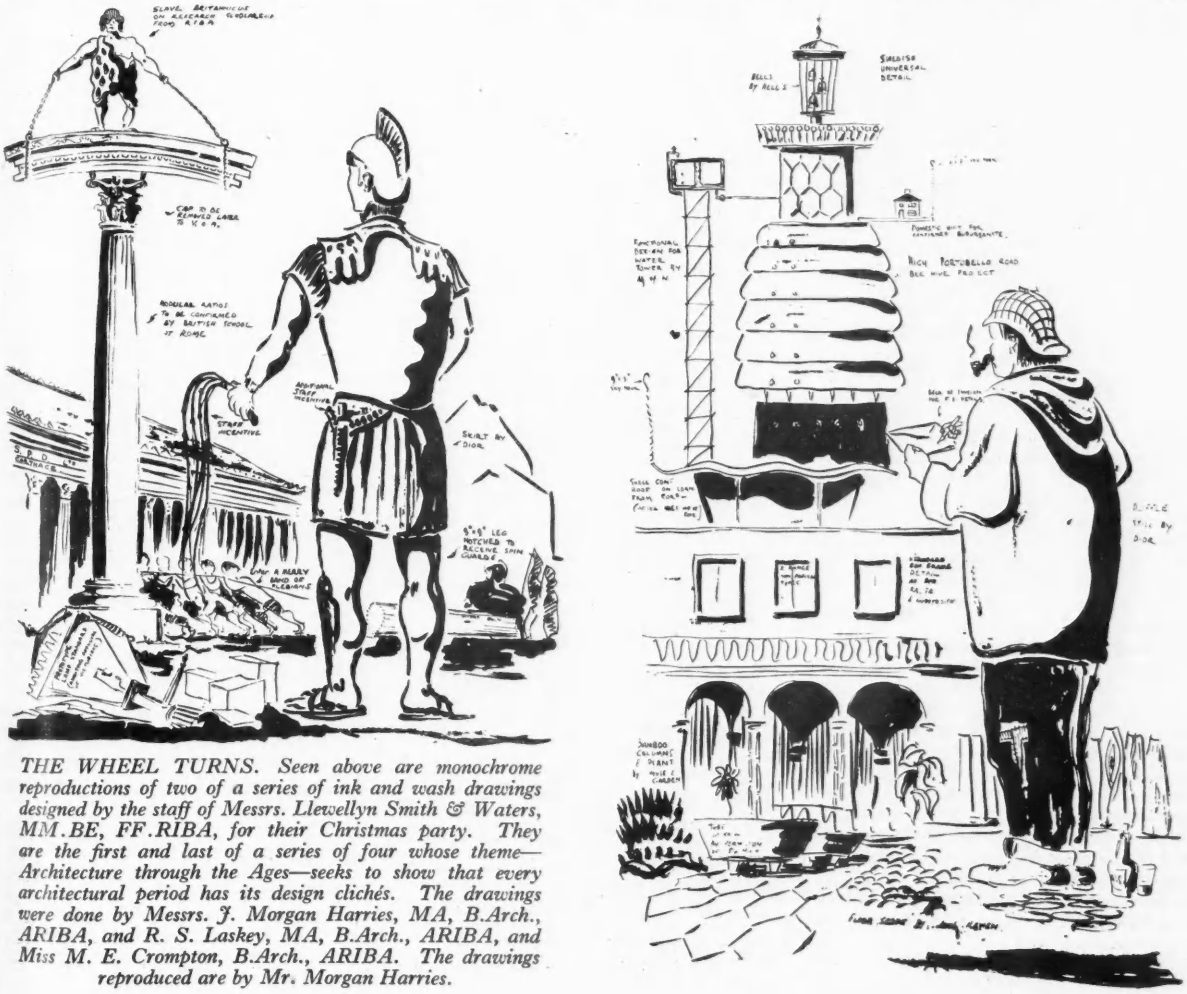
Regionalism is very much connected with texture. Travelling about with dear old Frederick Etchells, himself the translator of Corbusier, and with John Piper the artist, I have had constantly pointed out to me the varying domestic and ecclesiastical styles of our island, which change from county to county.

I think that texture more than colour is a distinguishing quality of English architecture. Our generally grey light does not show up to advantage those slabs of lapis and vermilion with which some architects think to vary the great cliffs of working class flats, with which they punctuate our boroughs.

So, too, does our climate respond best to outline. Over most of this island mild hills and not mountains are on the sky, so that high buildings stand out by reason of their outline. The outline of high buildings is in much of our poetry, the outline of high buildings was very much the concern of our architects until 1920. Perhaps we have been blinded by the wires and poles of electricity undertakings so that we can rationalise the awkward, thick and vulgar lines of concrete lamp standards. It is customary to-day for the sightless, who approve concrete standards, to condemn the Tower Bridge, yet I venture to think that to all but theory-bound architects and "art historians," that romantic outline is one which adds dignity to the widening Thames, something which goes with the masts of ships and fog and smoke. Consider even blocks of flats built by your forbears—things like Whitehall Court by Waterhouse, or even Bickenhall Mansions in Baker-street, or weird little turrets on big shop buildings and fussy town halls in the suburbs and in provincial towns—they all pay some regard to the sky, as did those old towers of our hilltop and marshland churches.

A quality of this outline is that it must not be too solid. Wren's steeples and brooding dome over the City, Street's Law Court spirelets and turrets, Barry's Palace of Westminster with its towers and steeples, and best of all Tommy Collcutt's Imperial Institute tower in South Kensington, all depend for their effect of outline by using shadow, piercing and carving and texture. Now compare this with the awkward overcrowding of mansard roof of commercial Renaissance work. Even uglier are the flat roofs of modern office blocks with those awkward parcels on the top which are something to do with the lift. The truth is that our climate is not one whose high buildings should be designed for sharp shadows and strong sunlight and a background of mountains. It is one which demands little colour and much texture and variety of sky-line.

There is another quality all great architecture must have wherever it is, and that



THE WHEEL TURNS. Seen above are monochrome reproductions of two of a series of ink and wash drawings designed by the staff of Messrs. Llewellyn Smith & Waters, MM.BE, FF.RIBA, for their Christmas party. They are the first and last of a series of four whose theme—Architecture through the Ages—seeks to show that every architectural period has its design clichés. The drawings were done by Messrs. J. Morgan Harries, MA, B.Arch., ARIBA, and R. S. Laskey, MA, B.Arch., ARIBA, and Miss M. E. Crompton, B.Arch., ARIBA. The drawings reproduced are by Mr. Morgan Harries.

is movability. A boring building is one which does not change as you go past it. An interesting building is one which changes and makes an angle, whether you are in it or outside it. Barry understood this in his superb building of the Palace of Westminster. But whoever designed Dolphin-square and the flats west of it and the new blocks of offices near Holborn Viaduct did not understand it.

Finally, the way fully to appreciate the work of our immediate forbears is to know something about them as people. Until about 1830 English architecture, except for the work of a few exceptional men like Wren, Vanbrugh, Hawkesmore, Gibbs, Chambers, the Adam Brothers, Wyatt and Soane, was a matter of regional tradition and conventions. Even the early Gothic Revival buildings of such men as Savage and Rickman did not differ all that amount. But after Pugin and with the establishment of great London architects doing business all over the country, individual office styles sprang up.

VICTORIAN PERSONALITIES

The personalities and the methods of working of the great nineteenth century architects are a help to the enjoyment of their work. The austerity of Butterfield, as recorded by the late Harry Redfern, his refusal ever to leave his room to go and see what he called his " clerks " in his drawing office, his habit of correcting pencil drawings in ink so that his " clerks " had to draw them all over again, his ban on all noise and smoking, his parsimony over holidays, his unapproachable Gladstonian aspect, his refusal to draw elevations to please clients—these all accord with his vigorous and lonely style.

We know something too of other personalities—Burges, always making jokes and who kept a parrot in his office and did his drawings in bistre on vellum, and lived in that wonderfully fantastic house in Melbury-road—" it was learned, glittering, amazing," says Lethaby. How interesting it would be to know more about Pearson as a man, about Brookes and Bodley, and, most of all, about Norman Shaw, that humorous and delightful person. There are still architects of the older generation who knew some of these men, or at any rate knew of them and their sayings and doings.

Before it is too late, let me beg those who knew the great late-Victorians and Edwardians to write down what they can remember of them as men.

I will conclude with some remarks on some whom I regard as enemies of the appreciation of architecture. First, but by no means the most formidable, is the thesis writer who is a glutton for dates and facts and bibliographies, whose pages are an unreadable Germanic display of foot-and-note disease, who looks at photographs of buildings rather than buildings themselves, who bothers about architectural style but not about people—this type of man is the robot of the new robot world of expertism and the comfortable little university chairs and stools on which it sits. How easy it is to bewilder students with a display of facts, but how hard it is to keep true appreciation alive.

Next comes the map mentality. This is the point of view which sees everything from the air and does not realise that where we live is for most of us where we are on our feet and walk about. " Ah ! " says the map man. " There is a green space in that town, let's fill it with houses." Or, " There is a congested area, let's pull it down and built it up as flats." Or, " There is a congested area, let's pull it down and turn it into an amenity." An amenity is to the map mentality the same thing as it is to the Borough Engineer and the Parks Superintendent—a rockery with some flowering trees, none of them higher than the Park Superintendent himself. These people enjoy isotypes and percentages. They talk of people in terms of " income groups " or fifty-plus, or whatever it happens to be. They forget that we are not yet insects and that we can laugh and sing and worship and that we do not want to be crammed into one of their industrial units and entertained by documentary films in the hygienic community centre.

Then there is the committee mentality. Many a promising young architect has been crushed and turned into a toady by having to toe the line of committees.

Dear architects and dear architects-to-be, you are not PRO's nor professional men, nor mammon worshippers. You are artists. You are beaten down by licences, by ceiling prices, by standardised materials. You are bewildered by arguments about style. You are fed with irrelevant and niggling facts. You are made the cat's paw of the engineer and the money maker. You must use tact and charm all the time. Your employers are too often committees of ignorant men who think they know about your art, or humourless state officials and theorists who will try to beat you down with statistics and ethical arguments in matters which are largely aesthetic. Keep your integrity. Always remember that you are artists. Where your forbears had seventy buildings to their credit in their lifetime, you, living as we all do in an age of complete barbarism, will be lucky if you have seven, and you will be luckier still if one of those seven is anything like the building you intended it to be. But keep on, keep your integrity and starve. Honour your forbears. They kept their integrity, but it was easier for them. Cheer yourselves with these two thoughts. Only by its architecture is a civilisation finally remembered. You are artists—one of God's greatest gifts to men.

RIBA PRIZES AND STUDENTSHIPS

Results of Competitions

AT a general meeting of the Royal Institute of British Architects held on Tuesday night, the results of the competitions for the annual prizes and studentships awarded by the RIBA were made known. There were in all 579 competitors. The total value of the prizes and scholarships offered by the RIBA is over £3,000 a year. The results of the various competitions are as follows :—

THE TITE PRIZE : A CERTIFICATE AND £100 FOR THE STUDY OF ITALIAN ARCHITECTURE : Subject, " An Italian Lakeside Garden." G. E. Howard (Student RIBA), Manchester University School of Architecture.

THE SOANE MEDALLION AND £120 FOR ARCHITECTURAL STUDY ABROAD : Subject, " St. Paul's Stairs and Terrace." D. A. Rock, ARIBA, School of Architecture, King's College, Newcastle upon Tyne.

THE PUGIN STUDENTSHIP : A SILVER MEDAL AND £80 FOR THE STUDY OF MEDIEVAL ARCHITECTURE OF GREAT BRITAIN AND IRELAND : C. S. Rowberry (Student RIBA), Birmingham School of Architecture.

THE OWEN JONES STUDENTSHIP : A CERTIFICATE AND £100 FOR THE IMPROVEMENT AND CULTIVATION OF KNOWLEDGE OF THE SUCCESSFUL APPLICATION OF COLOUR AS A MEANS OF ARCHITECTURAL EXPRESSION : J. R. Notman, ARIBA, Glasgow School of Architecture.

THE GRISSELL GOLD MEDAL AND £35 : FOR THE ENCOURAGEMENT OF THE STUDY OF CONSTRUCTION : M. P. Bates (Student RIBA), Brighton College of Art and Crafts.

THE ANDREW N. PRENTICE BEQUEST : A CERTIFICATE AND £150 FOR THE STUDY OF SPANISH ARCHITECTURE : J. E. D. Sanderson, ARIBA, School of Architecture Edinburgh College of Art.

THE ROYAL INSTITUTE SILVER MEDAL AND £50 FOR AN ESSAY : Peter Collins, ARIBA, Leeds School of Architecture, for an essay entitled " Jacques Francois Blondel."

THE ALFRED BOSSOM RESEARCH FELLOWSHIP AND £250 FOR POST-GRADUATE RESEARCH : Awarded jointly to : J. C. Eastwick-Field, ARIBA, and J. C. Stillman ARIBA, both of the Bartlett School of Architecture, University of London.

THE HENRY SAXON SNELL PRIZE AND THEAKSTON BEQUEST : £125. (Offered jointly by the RIBA and the AA for the study of the improved design and construction of hospitals, etc.) W. L. Smith, ARIBA, Sydney Technical College, New South Wales.

THE HUNT BURSARY : £75 FOR THE ENCOURAGEMENT OF THE STUDY OF HOUSING AND TOWN PLANNING : E. L. Lloyd Hughes, ARIBA, Birmingham School of Architecture.

THE ATHENS BURSARY : £125 FOR STUDY AT THE BRITISH SCHOOL AT ATHENS : Richard Leacroft, ARIBA, Leicester College of Art.

THE RIBA ROSE SHIPMAN STUDENTSHIP : A CERTIFICATE AND £200 FOR THE STUDY OF ARCHITECTURE. Major R. A. Jensen, FRIBA, Liverpool University, School of Architecture.

THE RIBA SILVER MEDAL AND £10 IN BOOKS FOR STUDENTS OF SCHOOLS OF ARCHITECTURE RECOGNISED FOR EXEMPTION FROM THE FINAL EXAMINATION, 1953 James Beveridge (Student RIBA), School of Architecture, Edinburgh College of Art.

THE RIBA BRONZE MEDAL AND £10 IN BOOKS FOR STUDENTS OF SCHOOLS OF ARCHITECTURE RECOGNISED FOR EXEMPTION FROM THE INTERMEDIATE EXAMINATION, 1953 : F. S. White (Probationer), School of Architecture, Edinburgh College of Art.

THE ARCHIBALD DAWNAY SCHOLARSHIPS, 1953 : THREE SCHOLARSHIPS OF THE VALUE OF £60 EACH FOR THE ADVANCED STUDY OF CONSTRUCTION : D. T Downes (Student RIBA), and G. A. Williams (Student RIBA) both of the Welsh School of Architecture, Cardiff ; and A. G. Giffen (Student RIBA), School of Architecture, Edinburgh College of Art.

THE RIBA HENRY JARVIS STUDENTSHIP AT THE SCHOOL OF ARCHITECTURE, THE ARCHITECTURAL ASSOCIATION, 1953 : £50 : A. J. Wylson (Student RIBA), Tankerton, Kent.

THE RIBA HOWARD COLLS TRAVELLING STUDENTSHIP AT THE ARCHITECTURAL ASSOCIATION, 1953 : £15 15s. : Miss J. M. Bridgwater (Probationer), London, W11.

THE RIBA DONALDSON MEDAL AT THE BARTLETT SCHOOL OF ARCHITECTURE, UNIVERSITY OF LONDON, 1953 : A. R. Osborne (Student RIBA), Mill Hill, NW7.

THE RIBA PRIZE FOR ART SCHOOLS AND TECHNICAL INSTITUTIONS WITH FACILITIES FOR THE INSTRUCTION OF ARCHITECTS (£10 IN BOOKS), 1953 : D. W. Bowes (Student RIBA), Richmond, Surrey.

THE RIBA PRIZES FOR PUBLIC AND SECONDARY SCHOOLS : The Prizes were awarded as follows :

(a) *Essays*. (1) A prize of £2 2s. 0d. to D. G. Muir, The Royal High School, Edinburgh, for his essay entitled " The Glasgow School of Art." (2) A prize of £2 2s. 0d. to Anthony J. Howrie, the Grammar School, Loughborough, for his essay entitled " The Guildhall, Leicester."

(b) *Sketches* : (1) A prize of £2 2s. 0d. to John Williams, the City of Bath Boys School, for his drawing of Palladian Bridge, Prior Park, Bath. (2) A prize of £2 2s. 0d. to C. R. Fisher, Mitcham Grammar School, for his drawing of Palladian Bridge and College Buildings, Prior Park, Bath. (3) A prize of £2 2s. 0d. to P. Bonnet, the Sutton High School for Boys, Plymouth, for his drawings of St. Mary's Church, Plympton, Devon.

No award was made in the case of the Banister Fletcher Silver Medal, the Godwin and Wimperis Bursary, the Henry L. Florence Bursary and the Rome Scholarship.

Most of the competition drawings will be on exhibition at the RIBA until February 2.

The President, Mr. Howard Robertson, ARA, will present the medals and prizes and will deliver an address to students at a general meeting to be held at 66, Portland-place, W1, on February 2, at 6 p.m., and a criticism will be given by Mr. Basil Spence, OBE, ARA, FRIBA, of the work submitted.

B 1954

You are
licences,
materials.
nts about
vant and
the cat's
ey maker.
the time.
mmittees
ey know
ess state
y to beat
d ethical
re largely
Always
Where
ldings to
living as
arbarism,
and you
ose seven
intended
integrity
rs. They
easier for
hese two
cture is a
You are
ts to men.

ATION, 1953
of Architec-

N BOOKS FOR
RECOGNISED
XAMINATION,
of Architec-

HIPS, 1953:
60 EACH FOR
D. T. Downes
t RIBA) both
ff; and A. G.
ecture, Edin-

HIP AT THE
CHITECTURAL
on (Student

NG STUDENT-
TION, 1953:
Probationer),

HE BARTLETT
OF LONDON,
ll Hill, NW7.
D TECHNICAL
INSTRUCTION
D. W. Bowes

SECONDARY
lows:
D. G. Muir,
or his essay
(2) A prize
he Grammar
ntitled "The

0d. to John
r his drawing
2) A prize of
mmar School.
College Build-
£2 2s. 0d. to
r Boys, Ply-
urch, Plymp-

nister Fletcher
Bursary, the
e Scholarship.

wings will
IBA until

Robertson,
and prizes
o students
eld at 66,
uary 2, at
e given by
A, FRIBA,

View from St. James's Drive.

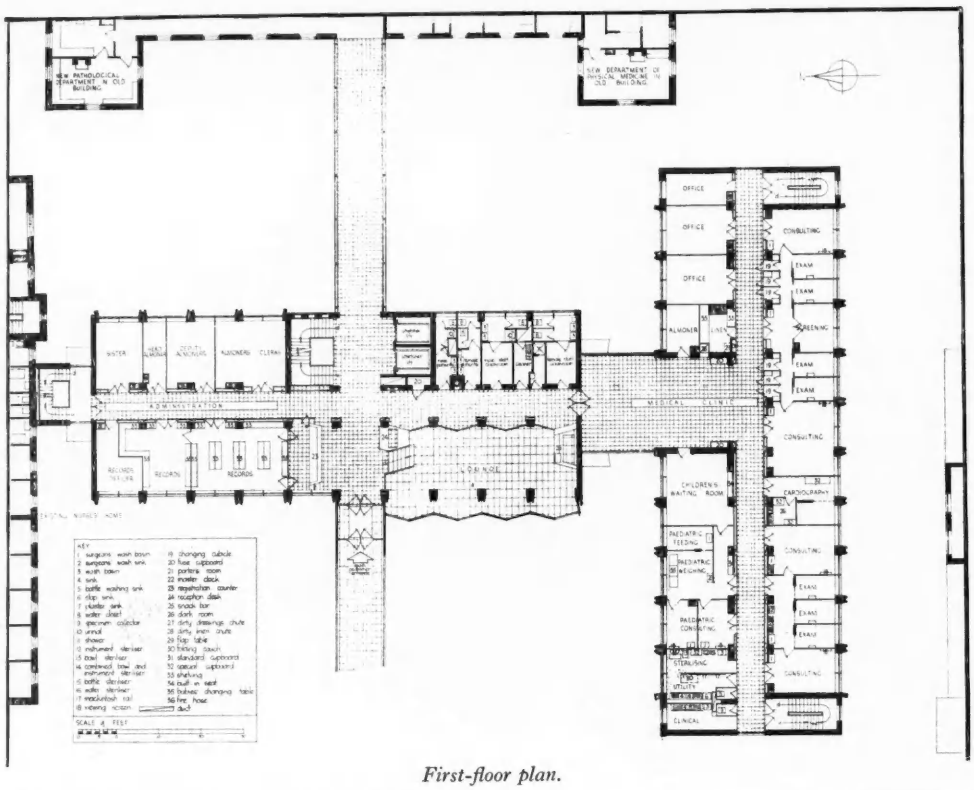
Outpatients' Department, St. James's Hospital, Balham

Architects : DEVEREUX & DAVIES, FF.RIBA

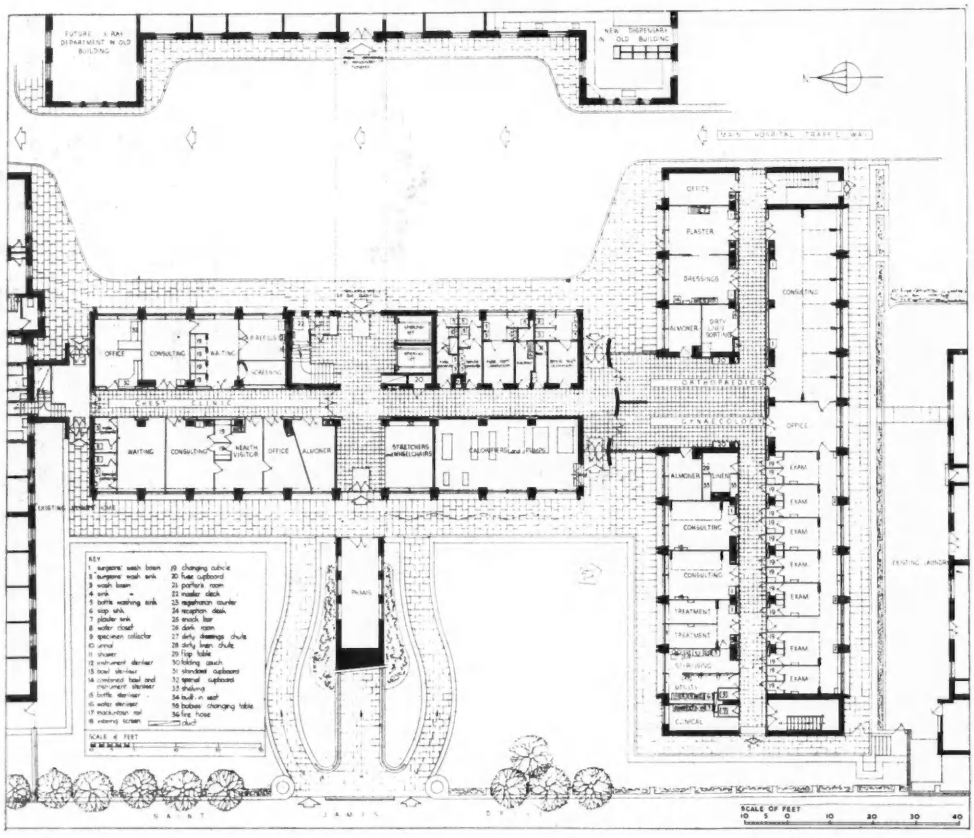
Consultant Structural Engineers	*Clerk of Works*	*Consultant Engineer (Services)*
CLARKE, NICHOLLS & MARCEL	*F. H. DUCKETT*	*H. A. SANDFORD*

Builders : MARSHALL ANDREW & CO., LTD.

E



First-floor plan.



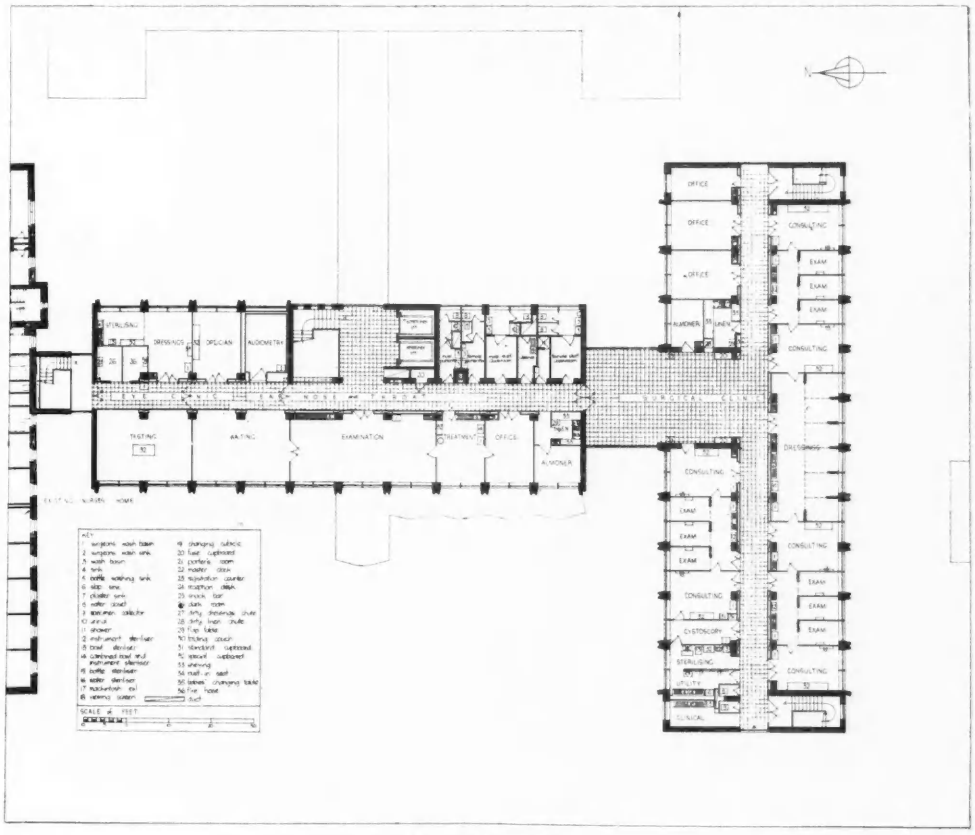
Ground-floor plan.

ST. JAMES'S Hospital was built in 1910 by the Wandsworth Board of Guardians to serve the boroughs of Battersea and Wandsworth. Since that time many alterations have taken place within the hospital, and considerable additions have been made by the erection of new buildings. The decision to provide a completely new building to house the whole outpatients' department, previously scattered throughout the hospital, was taken after the architects had made a survey of all the existing buildings.

Structure : For the static elements—foundations, floors, roof, ramp, piers, walls, staircases and lift walls—standard materials have been used, but advantage has been taken of modern methods of prefabrication in the design of parts which are movable. The partitions—and all doors therein—are of laminated plastic construction, with extruded aluminium joints between the slabs and aluminium strips at the junctions with floors and ceilings. The transverse partitions are generally secured by expanding jacks, making their removal and re-erection as simple as possible.

In order to obtain flexibility, the whole structural frame has been designed to eliminate beams in ceilings and all other obstructive projections in walls, thus achieving a degree of standardisation and precision in construction possible only where the exact position of every service pipe—even every electric light switch—is

View of south wing, showing entrance from east.



Second-floor plan.

predetermined. The dimension, 11 ft. 6 in. was chosen because it is a suitable width for a consulting room, and its moiety, 5 ft. 9 in., just sufficient for an examination cubicle. This modular arrangement extends for the full length of the building and is fundamental to the system. In transverse section the building consists of a centre corridor, which forms the spine, with space on either side. Apart from the continuous brick walls at the ends, the construction is basically a frame consisting of brick piers, reinforced with steel rods and tied with reinforced concrete beams. Prestressed concrete floors and roof span from the outside to the corridors, while the corridor itself is spanned by a normal reinforced concrete slab. The only beams which project below the general ceiling level are those which flank the corridor slab, but those are not apparent because the excess height in the corridor is enclosed by a false ceiling at a lower level, thereby forming an artery for the air-conditioning system.

At every internal pier are vertical ducts extending the full height of the building containing all-piped services. Although permanent features, these ducts are enclosed by plastic sheets forming part of the partitioning of the corridor. It is a matter of seconds to obtain access to them for maintenance or reorganisation, and they all lead directly to the horizontal passage—or creepway—under the building, which houses all the horizontal services and drains. Thus there is no external plumbing, all services being concentrated at the central spine.

Normal rooms are heated by radiators set beneath the windows which are supplied with hot water by vertical pipes running in specially formed recesses in the external columns. These risers originate at ground-floor level from horizontal pipes set in trenches which surround the building and are covered by removable paving slabs.

It was not considered practicable or necessary to provide plastic partitions throughout, and divisions between permanent rooms, such as lavatories, are built in the traditional way. The timber used to the frames and panels on the external faces of the building is Western red cedar, a material that is peculiarly resistant to the effect of damp and differences in temperature. For the internal wall linings certain African hardwoods were used, abura and andiroba. All glass in openings extending to the floor is armoured plate.

The building has not, in fact, been constructed as originally designed. A reinforced concrete frame was planned, and the foundations were laid accordingly; when, in the winter of 1951, it became impossible to obtain steel, it was decided to build in load-bearing brickwork. In order to prevent nuisance from noise in the corridors, the ceilings are of perforated acoustic boards and the floors are of cork tiles. The partitions here are double with a central cavity.

Another feature is the use of colour whereby each clinic is clearly identified.

Entrance ramp from west.

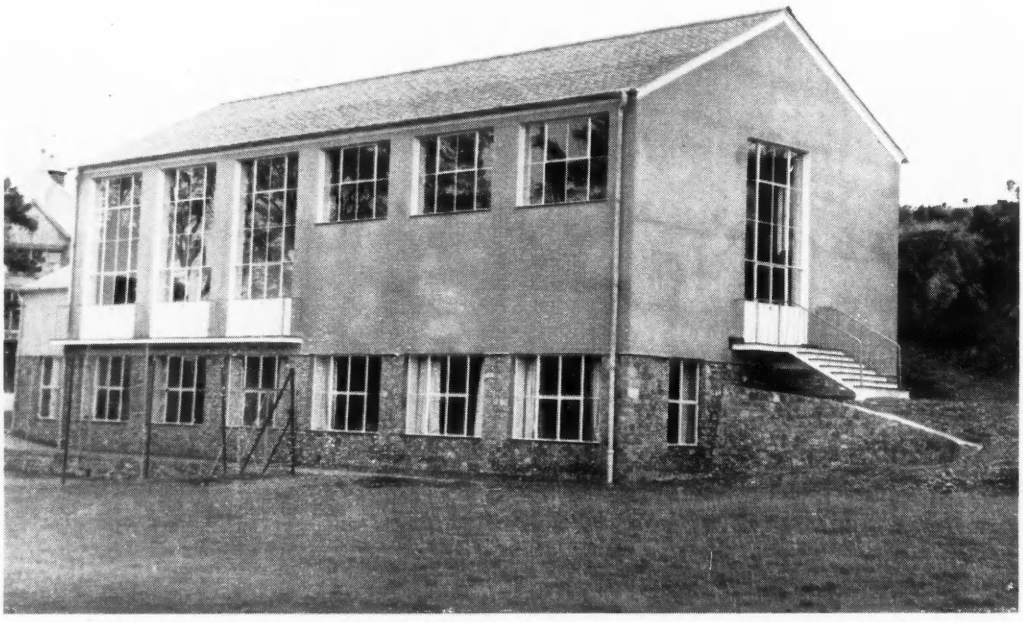
The colour code for the various parts is as follows : Administration (brown), surgical clinic (green), medical clinic (blue), orthopædic and gynæcological clinics (yellow), eye and ENT clinics (grey-green), chest clinic (salmon). It is felt that this scheme will give added interest, besides giving an instinctive sense of location.

SUB-CONTRACTORS AND SUPPLIERS were : Sterilising equipment, James Slater and Co. (Engineers), Ltd. ; plastic partitions, Holoplast, Ltd. ; metal windows and doors, W. James and Co., Ltd. ; hot and cold water installations and plumbing, Barrett and Wright, Ltd. ; electrical installation, Johnson Pearce and Co., Ltd. ; pre-stressed concrete floors, Costain Concrete, Ltd. ; laminated roofing, Alphamin, Ltd. ; cement glaze, John Ellis and Co., Ltd. ; sanitary fittings, John Bolding and Sons, Ltd. ; asphalt, The Lawford Asphalte Co., Ltd. ; paving, " Noelite," Ltd. ; cork and Accotile floors, Armstrong Cork Co., Ltd. ; door furniture, Yannedis and Co., Ltd. ; terrazzo, Art Pavements, Ltd. ; lifts, Hammond and Champness, Ltd. ; steel staircases, Fredk. Braby and Co., Ltd.; steel bridge, Fairfield Shipbuilding Co., Ltd. ; built-in furniture, L. M. Furniture, Ltd. ; and blinds, Tidmarsh and Co., Ltd.

OUTPATIENTS' DEPARTMENT,
ST. JAMES'S HOSPITAL,
BALHAM, LONDON

Above and below : Views of lounge on first floor.

OUTPATIENTS' DEPARTMENT, ST. JAMES'S HOSPITAL, BALHAM, LONDON



View from the north-east.

ADDITIONS TO ST. MARY'S COLLEGE, BANGOR

Architect
L. BEDDALL SMITH, ARIBA

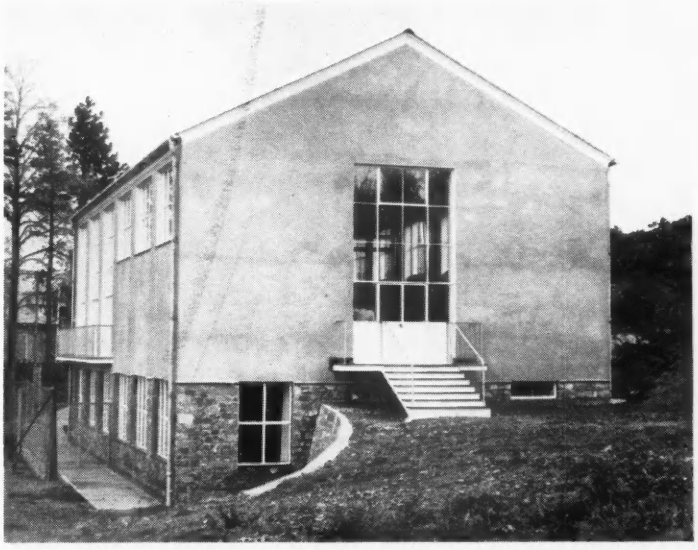
Quantity Surveyors
HORACE W. LANGDON & EVERY, FF.RICS

Builders
WATKIN JONES & SON, LTD.

THE Archbishop of Wales (Dr. John Morgan) recently opened this new building at St. Mary's College, one of the oldest teachers' training establishments in Wales. The additions consist of a modern, fully equipped gymnasium on the upper floor and a craft-room and changing rooms on the lower floor.

The college is situated on an extremely hilly site in a commanding position above the city. The old buildings and the playing field occupy the whole of the level land, and the architect had to squeeze the new building into a narrow space with a steep cross-fall between an existing tennis court and a crag of rock. In order to secure a level platform on which to build, it was necessary to remove by blasting a considerable quantity of the rock, and yet on the lower side of the site it was necessary to sink piers into the soft clay to a depth of up to 10 ft. in order to reach the rock for the foundations.

Except where resting direct upon the levelled rock the building is constructed upon a series of water-proofed reinforced concrete ground beams spanning between the mass concrete foundation piers. The superstructure is of brick, faced up to first-floor level with local rubble stone and above that finished with grey Cullamix Tyrolean rendering. The first-floor slab is of reinforced concrete and the roof is of

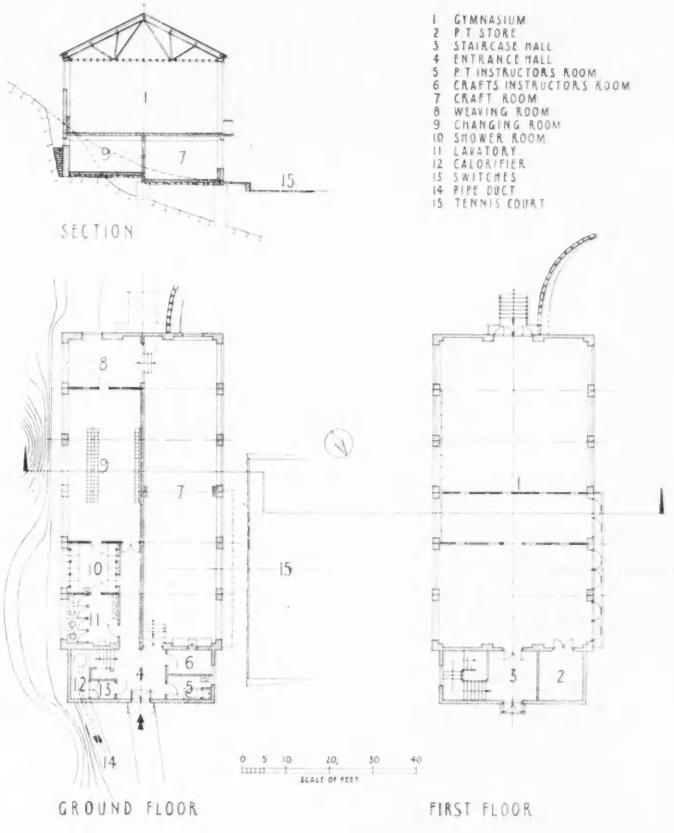


View from the north.

steel trusses carrying timber purlins and rafters covered with slate.

Rubbed slate obtained from the Penrhyn quarries has been used for the internal and external window cills and for the covering of the external reinforced concrete balconies and steps. The architect used the local stone and slate in order to produce a building which would be in harmony with the character of the older buildings of the college and of the city generally. A tablet commemorating the opening of the building was made of highly polished marble from the Aber quarry, Moelfre, and carved by Mr. T. J. Davies of Pendref Monumental Works, Bangor.

In addition to the gymnasium and craft-room block the architect has built the first section of a new central boiler house, and this serves the new block



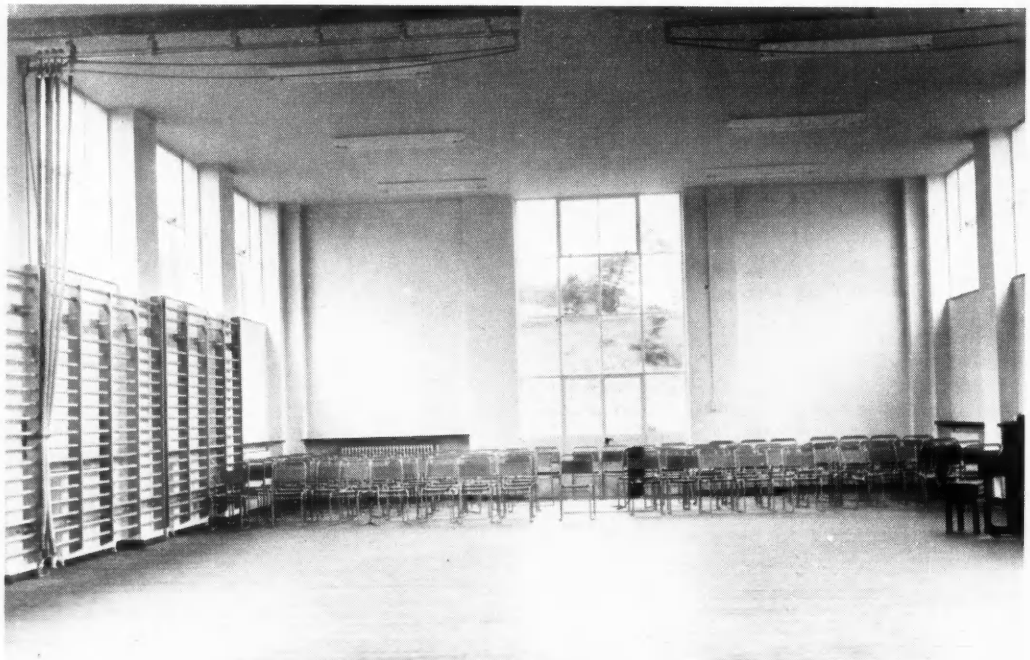
by means of flow and return pipes situated in an underground pipe duct and terminating in a calorifier. The heating water and domestic hot water are both derived from the one calorifier.

The gymnasium has a floor of Krabac hardwood strip secret-nailed to softwood fillets resting upon "Fibreglass" sound-insulating quilt to prevent impact noises in the gymnasium being a disturbance to the occupants of the craft-room below. The craft-room floor is of thermoplastic tiles. The other floors are of granolithic.

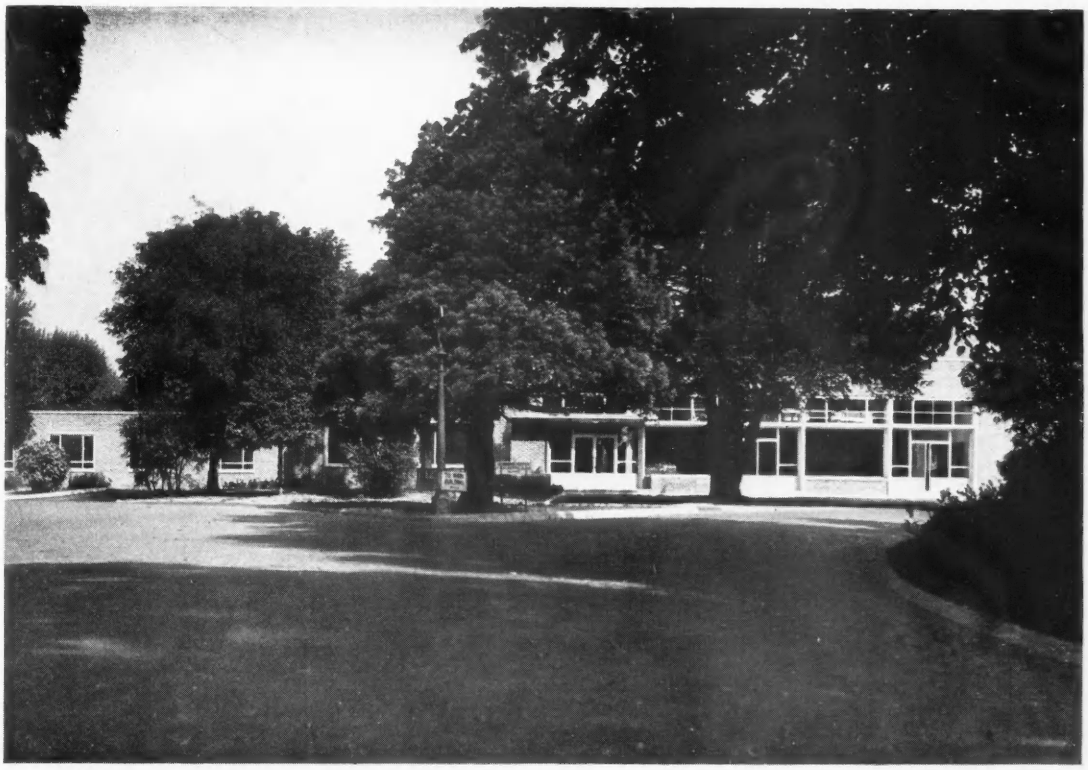
The whole of the interior is distempered pure white with the exception of the bed of the craft-room ceiling which is pale primrose distemper and the gymnasium ceiling which is pastel blue distemper. The lighting is by means of daylight fluorescent tubes. The craft-room curtains were made of linen specially printed by Gerald Holtom, of Twickenham. The wrought steel balustrades, internal and external, are painted in grey and pure chrome yellow. Following is a list of the sub-contractors:

Steel reinforcements and trusses, E. J. Cook and Co., Ltd.; heating and hot-water installation, G. N. Haden, Ltd., Manchester; ironmongery, Comyn Ching and Co., Ltd.; sanitary fittings, John Bolding and Sons, Ltd.; metal windows, Williams and Williams, Ltd., Chester; strip flooring, R. W. Brooke and Co., Ltd., Liverpool; steel balustrades, O. E. Griffiths, Bangor; sliding door gear, P. C. Henderson, Ltd., Barking; gymnastic equipment, Spencer, Heath and George, Ltd., Enfield; plumbing, William Williams, Bangor; thermoplastic tile flooring, Penmænmawr and Trinidad Lake Asphalt Co., Liverpool; electrical installation, Owen and Palmer, Bangor, North Wales.

ADDITIONS TO ST. MARY'S COLLEGE, BANGOR



The gymnasium.



View from the south.

New Outpatients' Department, St. James Hospital, Portsmouth

Architect
THOMAS K. MAKINS, ARIBA

Quantity Surveyor
THOMAS H. LAMBLE, ARICS

Builders
ROY CORKE, LTD.

TWENTY-SEVEN years ago, a new clinic for cases suffering from mental and nervous illnesses was commenced at the Royal Portsmouth Hospital. In 1939 the clinic was transferred to St. James Hospital and since then all adult outpatients have been seen in the hospital itself. Since 1945 the volume of work has greatly increased and this gave rise to serious accommodation difficulties which were partly off-set in 1951 by the modification of the hospital sewing room to form a temporary outpatients' department. The new building, however, will be a great asset to the hospital.

It has been sited at the head of the main entrance drive to the hospital with the intention that outpatients attending clinic for the first time should have no difficulty in locating the department.

The arrangement of the clinic, social workers' and psychologist's rooms gives great administrative flexibility and it is intended that the building will cope with a great increase in outpatient work.

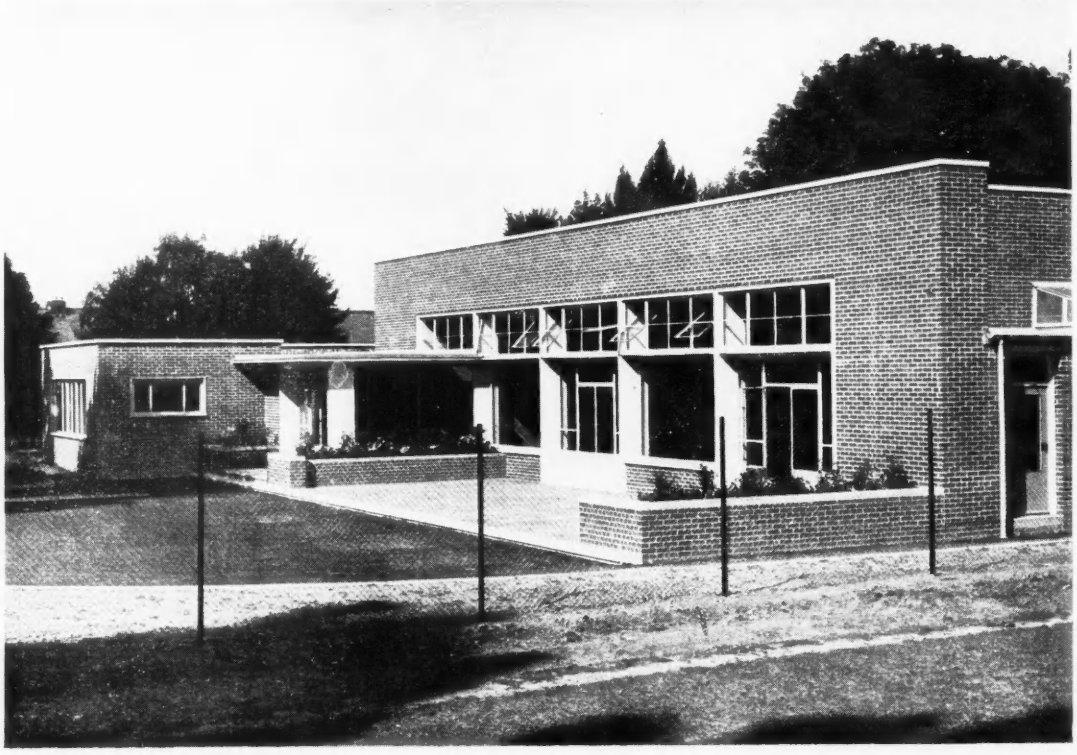
Outer walls generally are 11 in. thickness cavity walls, the outer skin being facing bricks. The inner skin is built in concrete blocks. The waiting hall maintains this walling system where it rises above the general height of the building, but on the south side concrete framing to the large windows incorporates concrete columns supporting the asbestos " troughing " roof on supporting steelwork. Roofs are hidden behind parapet walls having artificial stone copings to form the upper protection. The roof over the clinic wing is likewise roofed with asbestos " troughing " supported on steel members off the cross walls. Ceilings in this wing are plaster on metal lathing.

Flooring materials have been chosen to serve the needs of the different rooms. In the waiting hall the small flooring blocks are Muhuhu—an African hardwood. " Granwood " floors have been laid in the corridors. " Leatherfloor " is laid in the clinic rooms and stout quality linoleum in the utility rooms.

The building is heated by steam at atmospheric pressure fed from the main boiler plant. Pipes are mostly ducted under the floor and where possible (particularly in the clinic rooms) radiators have been recessed under the windows.

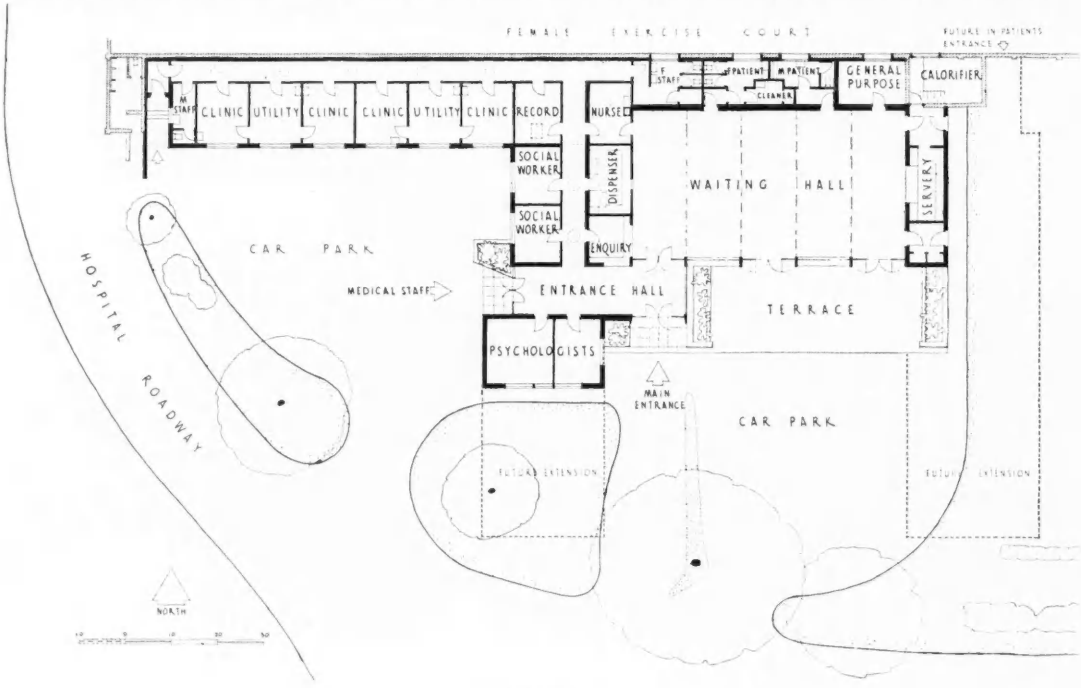
The main theme in the colour schemes has been to provide serviceable and restful greys on most eye-level surfaces, these being relieved by coloured ceilings in the entrance hall (terra cotta red) and waiting hall (pale blue). Other supporting colour is given by the doors, the furniture and curtains (predominantly red). Following is a list of the sub-contractors :—

Artificial stone, The Blokcrete Co., Southampton ; *cement glaze*, Robbs Cement Enamel Finishes ; *concrete blocks*, Warings, Portchester ; *metal ceilings*, Steel Bracketing and Lathing, Ltd. ; *board ceilings*, Roof and Lining Construction, Ltd. ; *windows*, James Couper and Co., Ltd., Worthing ; *ironmongery*, Parker, Winder and Achurch, Ltd. ; *glazed tiles*, Carter and Co., Ltd., Poole ; *lettering*, Dales, Ltd., Brighton ; *block floors*, Horsley Smith and Co., Ltd., Hayes ; *granwood floors*, Granwood Flooring Co., Ltd., Riddings ; *composition floors*, Leatherfloor, Ltd., London, E7 ; *linoleum floors*, Handleys, Ltd., Southsea ; *doors*, Saro Laminated Products, Ltd., Cowes ; *roadworks*, Limmer and Trinidad Lake Asphalt



View from the south-east.

Co., Ltd. ; *roofing asbestos*, Universal Asbestos Co., Watford ; *asphalt*, Neuchatel Asphalte Co., Ltd., Southsea ; *sheetmetal work*, George Gray, Emsworth ; *paints*, Imperial Chemical Industries, Ltd.. London ; *stone paint*, United Paint Co., Ltd., London ; *sanitary fittings*, Leeds Fireclay Co., Ltd., Leeds ; *electrical installation*, Thomas and Beauchamp, Ltd., Farlington ; *duct covers*, Meadow Foundry Co., Ltd., Mansfield ; *steelwork*, Redpath Brown Co., Ltd., Southampton ; *bricks*, Sussex and Dorking Brick Co., Ltd., Horsham ; *reinforcement*, Ferrocon, Ltd., Manchester ; *glazing*, Portsmouth Glass Works, Ltd. ; *heating*, Brightside Engineering Co., Ltd., Portsmouth ; *roller shutter*, G. Hall and Co., Ltd., Southsea.

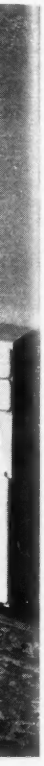


Block plan.

Entrance hall.

Reception desk and entrance to waiting hall.

OUTPATIENTS' DEPARTMENT, ST. JAMES HOSPITAL, PORTSMOUTH: Psychologist's room and (below) consulting room.



d

CO
(C
ST.AN

To t

SIR,—I
corres
when he sa
quantity su
bill will pr
all parts m
balance and
right place.
If the m
and the
materials a
ity, then t
appearing,
ised "Prel
dicate to th
of the part
It also seem
accurate bi
proportion
in the righ
objects of
ensure this
ambiguity
materials.
I do not
over-standar
If a bill of
it cannot he
strictly appr
no other. I
particular w
each compris
combination
percentage
such items c
It is becau
in different
pilation and
made possib
draft-bill do
way attenuat
completed pa
I sincerely
advocating th
into bills of
specification
bill. One ca
one has see
has, perhaps
"written hin
directions a
other bills w
(not always c
Yds. sup. 4
Yds. sup. 4
Tendencies
"heresies" a
standard draf
I did not c
abstracting an
but that tim
degree. The
is proving mo

H. M

20, Woodl

N

To the

SIR,—Mr.
certain
December 1
insists that
salaries in th
a joint effor
All I have do
is not on the
was given one

CORRESPONDENCE

(*Continued from page 45.*)

STANDARD DRAFT-BILL OF QUANTITIES

To the Editor of *The Builder*

SIR,—I am not at all sure what your correspondent Mr. Roper means when he says [*The Builder*, Jan 1] : " The quantity surveyor must consider how his bill will present the job to the estimator ; all parts must be in due proportion and balance and the emphasis must be in the right place."

If the measured quantities are accurate and the descriptions of labour and materials are concise and without ambiguity, then the type and number of items appearing, together with the particularised " Preliminaries " will inevitably indicate to the estimator the full character of the particular contract to be executed. It also seems inevitable, to me, that in an accurate bill all parts will be " in due proportion and balance and the emphasis in the right place." One of the main objects of the standard draft-bill was to ensure this conciseness and to eliminate ambiguity in descriptions of labour and materials.

I do not think there is any real danger of over-standardisation in bills of quantities. If a bill of quantities is accurately prepared, it cannot help but be an " individual thing " strictly appropriate to the job in hand and to no other. But, whilst bills of quantities for particular works must be " individual," they each comprise for the most part just a different combination of similar items, and a very high percentage of the descriptions attached to such items can hardly be " original."

It is because of this " common element " in different bills of quantities that the compilation and use of a standard draft-bill is made possible ; but the use of a standard draft-bill does not, and indeed, cannot in any way attenuate the ultimate individuality of a completed particular bill of quantities.

I sincerely hope that Mr. Roper is not advocating the introduction of " personality " into bills of quantities or suggesting that the specification should be incorporated in the bill. One can only deplore those bills which one has seen where the quantity surveyor has, perhaps unwittingly, yet unmistakably " written himself into the bill " with verbose directions and cross references—or those other bills where it is possible to find two (not always consecutive) items reading :—

Yds. sup. 4 in. concrete floor (kitchen).
Yds. sup. 4 in. concrete floor (scullery).

Tendencies in the direction of these " heresies " are curbed by the existence of a standard draft-bill.

I did not claim that time *would* be saved in abstracting and billing, as Mr. Roper suggests, but that time is being saved to a marked degree. The use of the standard draft-bill is proving most successful in practice.

H. M. STAFFORD [FIAS, FIArb].

20, Woodland-avenue, Hazel-grove, Ches.

NALGO AND ABT

To the Editor of *The Builder*

SIR,—Mr. Shrosbree has ventured certain criticisms [*The Builder*, December 18] of my previous letter. He insists that the negotiation of architects' salaries in the national health service was a joint effort. I have not denied this. All I have done is to point out that ABT is not on the Whitley Council at all but was given one seat (filled by Mr. Shrosbree, who, I believe, is not an architect) out of 15 on the negotiating committee, while NALGO filled seven seats—of which three were architects.

He complains that local government chief architects are lumped together with education officers, treasurers and accountants when it comes to fixing their salaries. This is true, and it has been to their advantage. Salary ranges are fixed by the Joint Negotiating Committee for chief officers of local authorities, which includes representatives of the County, City and Borough Architects' Association ; the representatives are the County Architect of Middlesex and the City Architect of Manchester. I suspect that these gentlemen are not in serious need of Mr. Shrosbree's help in safeguarding the interests of chief architects.

Then Mr. Shrosbree asks me how many of the 23 NALGO representatives on the National Joint Council for local authorities' administrative, professional, technical and clerical services are architects, though when ABT appointed a representative on the negotiating committee in the health service which dealt with salaries of architects, Mr. Shrosbree and not an architect was appointed. The 23 represent over 150,000 officers—administrative, professional, technical and clerical. There are so many professional grades covered that representation of any one section *per se* is impracticable. But nevertheless, when there is national grading of any section of staff it has been the policy of NALGO to arrange for representatives of any recognised body of the section concerned to submit its views to the Grading Sub-Committee of the National Joint Council—which is made up of three local authority and three NALGO representatives plus the joint secretaries. Thus, when the grading of assistant solicitors was considered, representatives of the Law Society were received; and when the grading of architectural assistants was considered, representatives of the RIBA were received. The actual negotiations are, of course, between the two sides of the National Joint Council, but it happens that as regards architectural assistants the gradings finally adopted were those put forward by the RIBA. The staff side were able to persuade the local authority representatives to agree.

Finally, Mr. Shrosbree, while admitting that the ABT is unable to influence the decisions of the National Joint Council, persists in the claim that " It is able to, and does, negotiate with the individual local authority." He is strangely reticent about the local authorities these negotiations have been with. And even if there had been negotiations they must have been in a very restricted field indeed. For salaries, overtime, hours, holidays, sick pay, travelling and subsistence allowances are all fixed by the National Joint Council, which ABT, he admits, is unable to influence.

Mr. Shrosbree must know that the large majority of architects in local authority employment—including chiefs—are members of NALGO. They are members because they know that NALGO is the recognised trade union of non-manual staffs in the local government service and that it has secured and is still securing substantial benefits for its members. A recent example is the Local Government Superannuation Act 1953 which improves the existing superannuation provisions. On the second reading of the Bill in the House of Lords, on June 16 last, the Government spokesman said, " These Acts crowned the efforts spread over 30 years of . . . . . NALGO, to secure satisfactory superannuation arrangements for local government employees." There was no reference to ABT, for ABT had had nothing to do with the Bill—any more than it has anything effective to do with the salaries and conditions of service of architects in local government.

J. E. N. DAVIS,
Chief Organisation Officer, National and Local Government Officers' Association.

1, York Gate, NW1.

*** This correspondence must now cease.—ED.

ARCHITECTS' SALARIES

To the Editor of *The Builder*

SIR,—The letter from Mr. Sidney Loweth in your issue of January 1 is a welcome contribution to an important subject. The Institute of Registered Architects fulfils all the requirements which Mr. Loweth thinks essential. It is constituted to serve architects as the BMA serves the medical profession. It acts for architects and architects only. It is complementary to the RIBA, devoting itself exclusively to the practical affairs of the profession.

Twenty-one years of useful work will be completed this year. The danger of starting from scratch with a new organisation designed to do the very work the Institute is already constituted to do is that the number of " groups " now in the profession will be increased instead of bringing about the desired unity.

A. E. WARD, Secretary,
Institute of Registered Architects.

47, Victoria-street, SW1.

ACCIDENT PREVENTION

To the Editor of *The Builder*

SIR,—How very welcome and appropriate is the torch you lit on the eve of Christmas in your editorial on this matter (*The Builder*, December 25). What better hope than that through the forthcoming year we may all witness the lowering of the appalling accident rate in building.

Previously in your columns I have mentioned the steel erectors of the industry. In this matter of prevention of accidents (or what I would prefer to express as the saving of lives) it seems abundantly clear that the time must come when the industry will be forced to comply with measures which will afford these men a " second chance," should they fall. Employers, undoubtedly, are confronted with a serious set of problems in seeking a form of safety device for the " ironfighter," one being that any measure suggested shall in no way retard the progress of the work of others. Another is that the cost involved may become in whole or in part a further burden on the industry during a period of striving to lower costs. Yet financial compensation *after* an accident has occurred can never measure up to the cost in human misery and suffering.

This brings to mind the possible truth that money, either in costs or other fashion, has blinded for too long both employers and unions to the responsibility so truly theirs. Fully envisaging the problem from all sides, may I humbly join you in the hope that the year 1954 may be a memorable one in the history of the industry, one in which was provided a second chance to live for all of these who move skywards as they blaze the way that others may safely follow !

GORDON TOMALIN.

1, Gower-street, WC1.

Architectural Practice by Unqualified Persons

REPORT OF RIBA COMMITTEE

AT the desire of the Allied Societies Conference, the RIBA Council at their meeting on January 6, 1953, appointed a committee to consider the problems of the infringement upon private architectural practice by unqualified persons and to make such recommendations as to action that they might think appropriate. Membership of the committee was drawn exclusively from members of the Council, and included a vice-president as chairman, the chairman of the Allied Societies' Conference, the Honorary Secretary and Honorary Treasurer, RIBA, the presidents of five Allied Societies and three senior official architects.

After a number of meetings and the consideration of a considerable volume of written evidence, the Committee submitted their report to the Council and made a number of recommendations. The Council then referred the report and recommendations to the various standing Committees of the Institute who were concerned. At their meeting on December 8, 1953, the Council reviewed the whole matter in the light of observations made by those Committees.

The full text of the report submitted by the Committee to the Council is published in the RIBA *Journal* for December, and we print below a summary of the recommendations considered by the Council and some notes on the Council's decisions and the action taken or in the process of being taken.

Recommendations Considered by the Council

Arising from paragraph 5 of the Report, the Committee recommended that steps should be taken to dissuade local authorities from permitting officials in public service to correct, amend or redraw unsatisfactory plans submitted for approval, and to encourage those authorities to return such plans with a strong recommendation that a properly qualified professional man should be employed by the building owner. The Council approved this recommendation, but expressed the view that effective action could not be taken at national level by reason of the wide measure of autonomy enjoyed by local authorities. It was thought that the only effective means of making such representations was by local contact between Allied Societies and the individual local authorities in their areas.

Arising from paragraph 8, it was recommended that the national liaison committee between architects and builders should go into the question of closer collaboration between architects and builders at all levels. This recommendation was approved and the matter discussed between the RIBA and NFBTE. The question is being pursued further, but it has been strongly reiterated that the most effective means of achieving such liaison is on a regional and local basis by means of the joint consultative committees set up in the provinces for the discussion of productivity matters generally.

The suggestion made in paragraph 9 [that approaches should be made to building societies both to encourage the employment of architects by those who build private houses and to discuss the possibility of the societies including professional fees in the total sum lent on mortgage] is in the process of being followed up by means of discussions with building societies' organisations and those representing housebuilders.

The further recommendations made by the Committee were concerned with the importance of increasing activity by Allied Societies, Branches and Chapters in public relations work generally, close contact with local authorities and information service to them in the way of literature describing the services provided by architects and lists of names of architects available to undertake work. It was also recommended that a further conference of public relations officers of Allied Societies should be held at the RIBA to follow up the work initiated in November, 1951.

These recommendations were cordially endorsed by the Council. Communications have been sent to Allied Societies and arrangements are in hand for the proposed further conference.

The Council endorsed the suggestion that members should in no circumstances assist the activities of the unqualified by covering or sponsoring plans prepared by them.

Detailed consideration was also given to the question of fees for private housing work, and it was agreed that the RIBA Scale of Professional Charges covers this question adequately, regard being had to the application of *quantum meruit* considerations for both normal partial services and for those services involving less than the usual amount of detailed design and supervision.

In approving the report of the Committee, the Council once again drew attention to the fact that the statutory administration of building affairs is greatly decentralised in the United Kingdom, with a wide measure of autonomy given to local authorities. Accordingly, the only effective approach on these matters must be regionally and locally.

WHOLE-HOUSE WARMING

THE Radiation Group, sponsoring probably the best-known whole-house warming system, gave some of us a demonstration of it installed in what seems the right context—a flat in the new block at Richmond designed by Eric Lyons —writes Basil Marriott.

This method of space-heating by ducted warm-air is to my mind complementary to the open plan which Lyons has skilfully exploited there, particularly when bedrooms can thus be maintained at comfort-level temperatures making them usable for study or other activities away from the pooled living-space.

The installation (gas-fired variant) is neat and compact, and the registers and room-thermostats which are all that is seen in the rooms do nothing to mar the detailing. Incidentally, I find the exterior of the flats most exciting.

Contemporary Architecture at Maidstone

COUNCIL'S ATTITUDE ATTACKED BY ARCHITECT

THE attitude of Maidstone Borough Council towards contemporary domestic architecture was strongly attacked by a Maidstone architect, MR. CLIFFORD WORTHINGTON, FRIBA, at a public inquiry conducted by Mr. J. D. Hossack, OBE, FRIBA, of the Ministry of Housing and Local Government, at Maidstone on December 30.

Mr. Worthington was speaking for Mr. David L. Bain, who was appealing against the council's refusal of planning permission for a house to be built in Conway-road, Maidstone, designed by Mr. Worthington.

He accused the Council of trying to impose a "dictatorship of taste." By turning down the design without consulting either himself or the panel of architects convened by the County Council, the Council acknowledged that art and progress did not matter, particularly in housing.

Denying this MR. D. P. HARRISON, deputy town clerk, said the Council was not against contemporary architecture. The plan had been rejected on its merits because it was in too violent contrast with existing houses in the road.

MR. WORTHINGTON explained that the part of the house facing Conway-road had been designed not to clash with other houses. But the elevation overlooking fields was of modern design, with liberal use of glass. A brightly coloured asbestos sheeting would divide the upper and lower storeys.

Because that part of the house did not overlook a street, Mr. Worthington claimed that the Council ought not to reject the design.

Citing a contemporary design by another local architect, Mr. John Poltock, ARIBA, for which planning permission was refused by the Council, but upheld by the Ministry, Mr. Worthington said, "There can be no advance in the art of architecture or efficiency of building locally by the adoption of dictatorial methods by this Council.

"They merely encourage mediocre building of limiting cell-like planning devoid of aesthetic concept—a slavish copying of the type of domestic building reminiscent of the pre-war speculative suburban villas—sham and bastard architecture of the pseudo-Tudor inter-war period that stems any real progress.

"I am too humble in my profession to presume to carry the proverbial torch of enlightenment, but I hope that in some small measure, I have contributed something towards exposing and combating this Council's professed prejudice against architectural progress."

The borough surveyor, MR. SIDNEY F. DIXON, said the house would be on what would probably be a corner plot, facing a new flank road. The Council was not against contemporary architecture, but this had to be in harmony with other buildings.

Mr. Dixon told Mr. Worthington that no member of the Council's staff was a member of the Town Planning Institute. He did not know if his Council had been advised by a professional architect because he was away ill when the plan was considered. He agreed that if he had been on duty he would probably have consulted Mr. Worthington, as he had done about previous plans.

PROBLEMS OF BUILDING BY-LAWS

Examination by Association of Municipal Corporations

A NUMBER of problems in connection with building by-laws have been examined recently by the Association of Municipal Corporations, and in some cases approaches are being made to the Ministry of Housing and Local Government, writes a correspondent. They cover these points:—

Public Health Act, 1936.—Two county boroughs have asked for the provisions of section 64(4) of the Public Health Act, 1936, to be amended so that the prescribed period referred to (being the time within which local authorities have to reach a decision on plans submitted in the building by-laws) is extended. The boroughs suggest that the new building by-laws will place a heavy burden upon local authorities, as there will be a considerable increase in the range of technical matters requiring detailed consideration. The Association feels, however, that any difficulty can be overcome by delegating authority to a committee "with power to act," and there is no need for any amendment of the Act.

Model by-laws.—Some towns have called attention to difficulties encountered in getting Ministry approval to building by-laws which contain certain provisions not in line with the model series issued by the Ministry, and the Association is taking up with the Ministry the need for local authorities to have discretion in settling certain of their by-laws, and the desirability of extending the period of existing by-laws to enable authorities to complete preparation and printing of new.

Fallen buildings.—The Association is suggesting to the Ministry that, when suitable amending legislation is contemplated, the desirability of making building by-laws applicable to buildings which have fallen down should be contemplated.

FUNDS FOR HOME-MAKERS

Building Societies' Need of Investments

MR. HUBERT NEWTON, chairman of the Building Societies' Association, in a New Year message to member societies, says that although it will be a few weeks before results can be officially assessed there is legitimate reason for saying that the past year has been one of successful effort.

"The great concentration of the building industry on house-building has produced dwellings on a scale almost comparable with that achieved before the war," he says, "and there has been a gratifying increase in the number of houses built by private enterprise for sale as well as of those built to let.

"While so far as one can see the demand for homes is bound to persist, there are many signs of general concern at the mounting commitments of the Government and local authorities in respect of the future housing programme. Sooner or later, it is clear, measures to limit expenditure on housing will become necessary. One obvious way of achieving this end will be the further encouragement of private building for sale.

"Building societies exist to further house-ownership. But if they are to provide homes in greater numbers for those who wish to remain independent of the State, the building societies must first see to it that necessary funds are available. They have in the past enjoyed the confidence of the investing public to a remarkable degree, savings entrusted to them, now exceeding £1,4000 million, having doubled since the war. However, they can and must do more."

Mr. Newton declares that large classes of potential savers are still at the moment untouched by any savings drive. "It must be our aim therefore further to educate the people in the necessity for saving and to provide easy means for them to do so," he adds.

A BUNGALOW FOR TWO BUSINESS WOMEN

Designed by JOHN AUSTIN & PARTNERS

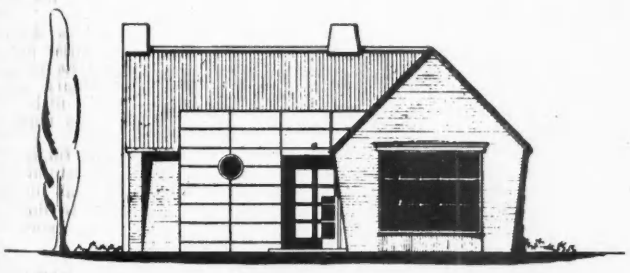
IN designing this particular bungalow, Messrs. John Austin and Partners, of Bournemouth, were asked to accommodate two individual business women, each with her own living-room, kitchenette and bedroom; the bathroom and w.c. to be shared. The plan shown, which has a floor area of 917 sq. ft., was agreed, and the building has now been completed for a total cost of £2,085, including the garden walls, fences, paths and designers' fees.

By the introduction of the flat roof over the kitchenettes, hall, etc., it has been possible to save considerably on the roof tiling and timbering, as well as providing a roof light to the inner hall which gives it a spacious appearance.

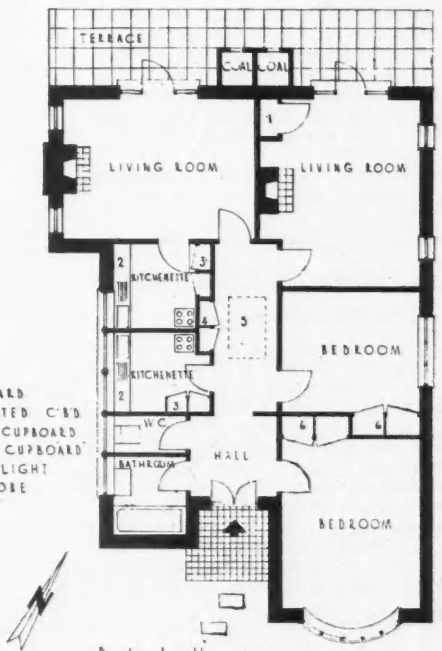
The hot water is supplied by a multi-point Ascot heater coupled directly to the main water supply, and the whole of the cold water system consists entirely of one main supply pipe with direct connection to each tap position. No storage cistern or hot water cylinder is provided, and in all there is only about 17 ft. of pipe to each of the hot and cold water supplies.

Externally, an effort has been made to use colour as the main architectural feature. The roof is covered with a plain antique tile; the faced brickwork is in red sand-faced bricks with the horizontal joints picked out, while the vertical joints are obscured; and the rendering is in Colormix of a light green, struck out in panels with a sunken white joint.

The builders were Messrs. C. and F. Cobb of Wallisdown, Bournemouth.



N-W- ELEVATION



PLAN

DESIGN FOR A BUNGALOW FOR TWO SINGLE BUSINESS PEOPLE ERECTED AT BOURNEMOUTH

MORE BUILDING CONTROLS RELAXED

Certificates of Registration Ended

From a Legal Correspondent

MORE building controls have been relaxed as a result of recent Orders in Council modifying the Defence Regulations. Defence Regulation 56AB has been completely revoked, and Defence Regulation 56A has been modified by the exclusion of paragraphs (6A) to (6E) dealing with penalties for illegal building.

As a result of the revocation of DR 56AB, it will no longer be necessary for anyone wishing to carry on business as a building or civil engineering contractor to have a certificate of registration from the Minister of Works. The abolition of this Regulation is not likely to have any very important effects in practice. The Minister had no power to refuse a certificate unless the applicant had been convicted of illegal building, and the main object of the Regulation appears to have been to enable the Ministry to keep a complete register of building and civil engineering contractors for the purpose of collecting statistics of employment and output. The Minister's power to revoke or suspend the certificate of any person convicted under DR56A has provided an additional sanction against illegal building, but it is doubtless considered less important to maintain this sanction now that the licensing limits have been relaxed.

The revocation of paragraphs (6A) to (6E) of DR 56A substantially reduces the penalties for illegal building. Those paragraphs have provided both minimum and maximum penalties, viz.:—

On summary conviction: Fine (minimum) £50 or the cost of the work, whichever is the less; (maximum) £500 or the cost of the work, whichever is the greater; and/or a maximum term of imprisonment of one year.

On conviction on indictment: Fine (minimum) £500 or the cost of the work, whichever is the less; (maximum) £5,000 or three times the cost of the work, whichever is the greater; and/or a maximum term of imprisonment of seven years.

Now that these paragraphs have been revoked, the penalties will be those prescribed by DR 92. There are no minimum penalties under this Regulation, the maxima being:—

On summary conviction: Three months' imprisonment or £100 fine or both.

On conviction on indictment: Two years' imprisonment or £500 fine or both.

PRESTRESSED CONCRETE

MoW Advisory Leaflet

PRESTRESSED CONCRETE is the subject of No. 35 in the Ministry of Works series of advisory leaflets, which is the latest to be published by HMSO (price 3d.).

The leaflet explains what prestressed concrete is and describes common methods of prestressing. It is not, however, a guide to the making of prestressed concrete. It draws attention to the advantages of using factory-made precast prestressed units, which can now be obtained, such as small beams, floor joists, posts, and complete frames for farm buildings, and it gives hints on how to use them.

The Ministry's advisory leaflets are designed mainly to give information in simple and practical form to the small builder, clerk of works, foreman and craftsman about the results of research and the latest developments in building practice.

OFFICIAL NOTIFICATIONS

Defence Regulation 56A: Definition of Designated Buildings

THE Ministry of Housing and Local Government have sent a circular (No. 72/53) to housing authorities on the financial limits for unlicensed building work (under Defence Regulation 56A), in which it is stated that the definition of "designated buildings" (for which the new financial limit is £25,000), which may be described briefly as industrial and agricultural buildings, is unchanged. The term "industrial buildings" means, generally speaking, the circular states, factories and workshops. It does not include commercial premises, shops, banks, offices, warehouses and the like. "Agricultural buildings" include all farm buildings except the farmhouse and the farm workers' cottages.

Cast Iron Pipes

IN CIRCULAR No. 73/53, issued to all local authorities, the Minister of Housing and Local Government refers to circulars 178/48 and 37/53, regarding the ordering of cast iron pipes and specials.

Up till now authorities have been asked, when ordering pipes, to attach a certificate that the scheme to which the order relates has been authorised by the Department; this has applied to all orders over a fixed amount, at present £500, except orders for repairs and maintenance.

The Minister has now been informed by the makers that the supply position has improved sufficiently to make it possible to dispense with the certificates. This should help both the authorities and the makers provided there is no excessive ordering as a result. For their part the makers have assured the Minister that they will give priority to orders of pipes for any scheme specially notified to them by the Department as urgent. Paragraph 3 of circular 178/48 and circular 37/53 are accordingly withdrawn.

Changes in Rates of Purchase Tax

AMENDMENTS of the rates of purchase tax on a number of goods have been announced by the Treasury to take effect as from January 6.

Goods on which tax has been reduced from 75 to 50 per cent. include electric space heaters and electric water heaters.

The orders make certain tiles, strips, and blocks of a kind suitable for laying or fixing to floors or sub-floors, not of metal, and of a thickness (excluding any backing) of less than $\frac{3}{8}$ in. or, if of wood or cork, of less than $\frac{5}{8}$ in., chargeable with the tax at the same rate as other floor coverings, namely 25 per cent. The flooring materials now included have been exempted from tax since 1949.

Copies of the Treasury Orders concerned (Statutory Instruments, 1954, Nos. 1, 2 and 3) are obtainable from HMSO.

OBITUARY

R. Hilton

MR. R. HILTON, Borough Engineer of Redcar (Yorks), has died in hospital at the age of 47. He had been connected with municipal authorities for more than 28 years and was appointed Borough Engineer at Redcar in 1945 when Mr. J. Locking resigned.

TRANSFER OF ARCHITECTURAL WORK

Proposal to be Resisted

A PROPOSAL by Birmingham City Council's general purposes committee that the architectural work of the education committee should be incorporated in the new City Architect's Department is strenuously resisted in a report to be submitted to the education committee, which is now "engaged in a desperate race against time" in providing accommodation for increasing secondary school numbers.

The finance and general purposes committee is reporting to the education committee that the volume of architectural work done by the education department justifies its continuance as a separate architectural staff.

The amount of capital investment on schools and colleges each year is of the order of £2,000,000 a year and is likely to remain so for a considerable time, it says, justifying the employment of a staff of well-qualified architects fully engaged on educational work.

Also, the architectural work of the committee was of a specialist nature and required the services of architects with a great deal of experience of planning and building schools and other educational institutions.

There was need for the closest possible contact between the architect engaged on school building and the teachers, officers and specialist advisers of the education committee. It was obviously easier to create such liaison within one and the same department of the corporation. No economies could be expected from the suggested new arrangement. The architectural branch of the education department worked efficiently and well.

"Not only have the education committee no enthusiasm whatever for the new proposal," says the report, ' but they are completely dismayed that it should be made at the present time.

"The education committee, with the full support of the City Council, have now broken the back of the primary school-building problem arising from the much-increased school population.

"They are now engaged in a desperate race against time with the similar problem at the secondary-school stage. The maximum number of pupils in secondary schools during the present year is likely to be about 58,000. In five years' time the number is likely to be about 78,000.

"It is impossible for the fundamental reorganisation of the architectural work proposed to take place without time and energy having to be diverted to the many administrative changes that would be necessary."

HOUSING PROGRESS REPORT

Figures for November

THE HOUSING SUMMARY presented to Parliament as a White Paper* jointly by the Minister of Housing and Local Government and the Secretary of State for Scotland, shows that the number of permanent houses completed in Great Britain during November was 29,380, compared with 22,143 in November, 1952.

In the first eleven months of 1953, 285,274 permanent houses were completed, compared with 216,527 in the same period of 1952.

* Cmd. 9029, Housing Summary, November 30, 1953, HMSO. Price 2d.

THE CLERK OF WORKS

His Duties and Functions Defined—2

By NORMAN P. GREIG, BA, Barrister-at-Law, HonFIQS, FIArb, FRSanI

The Legal Position

AS mentioned in the first article, it is usual for the architect to nominate the clerk of works which, of itself, should be some guarantee of the reliability and qualifications of the C.o.W. But this procedure also puts a responsibility upon the architect to use his care and skill when making the nomination; for he may find himself responsible should the C.o.W fail in his task to the detriment of the employer who approves the appointment.

This principle was clearly laid down in the old case of *Mackersey v. Ramsays* (1843), 6 CL and F. 813, where it was held that an architect must use every care and skill to select proper employees to assist him in his business; and if the work entrusted to him is badly done, "it is submitted that he will be responsible." The use of the word "employees" in this case (which applies particularly to assistants and office staff) can be applied to the clerk who, for many purposes, is the assistant to the architect on the site. Once appointed, however, the architect is not entitled to put implicit trust in the clerk. He, the architect, is bound to see to the carrying out of the structures, though in details he may be content to rely upon the clerk. If he relies too much upon the clerk and permits deviation from his (the architect's) design he can be made liable in damages to the employer for negligent supervision.

The following case throws some light upon the position where the employer both nominates and appoints the clerk, *Saunders v. Broadstairs LB* (1890) (*Hudson*, 4th Edition, Vol. ii, 164).

In Halsbury's Laws of England, Vol. 3, p. 189, the writer's comment upon the case includes a definition of clerk of works evolved from it, viz.:—"a person employed to superintend construction of buildings and other works in order to ensure that the builder supplies proper labour and material (Dictionary of Architecture). He is subordinate to the architect and his power should be negative, that is to say, he should only have power to disapprove of materials and work and not to bind the owner by approval of them. The architect is not entitled to rely implicitly on the efficiency of the clerk, but must himself exercise reasonable supervision."

In the Saunders case, engineers sued a local board for sums due for work done, which defendants said was negligence in design construction and supervision. The plaintiffs pleaded that they at all times had exercised due and reasonable care and skill, and endeavoured to push the responsibility upon the clerk of works who had been appointed, *inter alia*, to superintend the levels of sewers (a material matter in the case). They said the clerk had been appointed by the defendants and that they had remonstrated against the appointment at the time it was made. They submitted that they were not responsible for errors of the clerk, and that the matters complained of were due entirely to the incompetence of the clerk.

The court held that if the engineers relied upon the clerk they were negligent. They knew he was not reliable and, furthermore, it was their business to see to the levels; also, if they did not trust the clerk their own position (in leaving matters to him) was even worse.

Another case which we shall quote later, is very emphatic upon this matter of appointment of the clerk by the employer holding, that if this be the case, the architect may be liable to the employer for his negligence (*Leicester Guardians'* Case).

ESTABLISHED PRINCIPLES

Several cases have established the principle that has been explained in these articles, viz.:—that the architect can remain responsible for acts and faults of his subordinates to whom he entrusts the superintendence of details, e.g.:

Leicester Guardians v. Trollope (1911), 11 JP, 197. A firm, of which the defendant was the sole surviving member, was employed as architects. Under the contract a clerk of works was to be appointed. *Four years after the work was completed*, dry rot was detected in floors laid out over concrete on the ground floor. It was alleged that the defect arose from the negligence of the architect, who failed to see that the concrete was properly laid in accordance with the contract. The defendant denied it was his duty to supervise the laying of the concrete, saying it was that of the clerk of works appointed by the Guardians. (It was mentioned in the case that the architect had given the certificate of completion, and that the maintenance period under the contract had expired.) The judgment (in which the architect was held liable) covers these points:—1. If the floor was constructed differently from the design, the builders had no right to do so. 2. If it could be proved that the omission to prepare the floors properly was due to collusion between the builders and the clerk, the builders could have been sued in spite of the certificate. 3. The builders were not sued, so the court held the fault lay with the architect. The judgment covered a further point—that the clerk of works could suspend the use of materials pending instructions from the architect (or engineer), but he should not measure up except with the latter's permission; and the clerk should not be regarded as the agent of the contractor, nor as mediator between employer and architect, but considered as acting solely as the inspector and assistant of the architect.

ARCHITECT'S PERSONAL DUTY

In *Moneypenny v. Hartland* (1886) 2 C. and P. 238 (a case dealing with the question of negligence in regard to an architect (or surveyor) who had delivered to the employer an estimate of the cost of a proposed building so greatly in excess of its actual cost, as to be regarded as evidence of lack of care and skill) a principle was laid down that can be applied to the relationship of architect and clerk of works—that though an architect is not bound to make a personal examination, if he doesn't, and adopts incorrect information, he is liable for the consequences. He should therefore, for his own protection, make it his professional duty to examine and test statements and plans made by others.

Lee v. Bateman (1893) *The Times*, October 31. This case goes far beyond the mere leaving of detail to the clerk of works. In connection with the rebuilding of certain premises after an outbreak of fire, the defendants appointed the plaintiff as architect, and also appointed a clerk of works. The architect left it to the clerk to decide whether new beams were required in connection with the works, and did not go to the trouble of examining them for himself, relying absolutely upon the opinion of the clerk. The beams turned out to be unsatisfactory. The court held that though the plaintiff (the architect) was not responsible for the negligence of the clerk of works (he had not appointed him), the question as to whether new beams were required or not, was one for the architect, and not for the clerk of works, the architect being consequently held negligent.

NEGLIGENCE OF THE C.o.W.

It is a well-established principle that professional men rendering services for reward are bound to possess an ordinary and reasonable degree of care and skill in the art or profession which they profess by undertaking to do the work, and are liable for failure if they do not use reasonable care and diligence.

The clerk of works quite obviously comes within the rule and the high qualifications he usually possesses must tend to raise the level of the care, skill and diligence he is expected to show.

Whether he has done so is a matter of fact in each case and "appears to rest upon this further inquiry, *viz.*, whether other persons exercising the same profession or calling, and being men of experience and skill therein, would or would not have come to the same conclusion as the defendant." (Per Tindal, C. J., *Chapman v. Walton* (1833). 10 Bing., at p. 63.)

(To be concluded.)

QUALITY OF WORKMANSHIP

Better Supervision Needed

BIRMINGHAM House Building Committee have compiled a report on the result of the inquiry made into alleged bad workmanship on the Corporation's housing estates. "Insistent demands for increased speed," the report states, "have led to practices which some consider to be a discouragement to good workmanship. In these circumstances, supervision of the highest character is essential if the quality of the work is not to suffer.

"Difficulties peculiar to the work are raised by non-traditional methods of building," the report continues. "Firms undertaking this type of building maintain their own specifications, which may be less explicit on control of quality than the Corporation's specification for traditional houses, thus making supervision more difficult."

The report adds: "The City Architect (Mr. A. G. Sheppard Fidler), after investigation, is satisfied that the safety and stability of the houses have been reasonably established." Referring to cases of damp and cracked plaster found in certain houses, the report says: "The contractors have been informed that the committee take a very serious view of the accumulation of troubles which will involve a heavy programme of repair work.

"It is assured that the contractors are viewing the matter with due concern and that they are anxious to do their part in rectifying matters. It has been arranged that senior officials of the City Architect's Department and of the Housing Management Department shall meet the contractors."

Fig. 1.—Renderings applied to various surfaces.

Some Problems of Plastering and Rendering

By E. L. WESTBROOK

THERE would still appear to be a tendency on the part of those responsible for drawing up specifications to dismiss both rendering and plastering in general terms, without thought of the backgrounds which are to be covered and without some knowledge of local materials and practices. Yet these considerations are of importance in avoiding certain of the troubles experienced, such as crazing, hollowness, shelling of finishes from background softness, etc.

Architects frequently appear to expect renderings to resist conditions for which they are not suitable, as, for example, in covering garden walls constructed in common bricks. Many bricks contain the soluble sulphates, such as Epsom or Glauber salts, which react with cement under damp conditions and produce calcium-sulpho-aluminate. This occupies a larger volume than the original, is soft and powdery, and results in crazing, breakdown and falling away of the rendering. For such conditions of exposure it would be wiser to try to avoid bricks known to contain sulphates, to prevent the entry of water by properly placed dpc.s and flashings, or better still to use facing bricks and no renderings. A rendering, however dense, will not provide a permanent dpc for exposed horizontal surfaces.

Fig. 1 shows a corner of a street, typical of many, where most visible surfaces have been rendered. Some of these surfaces have top protection for the rendering, but the boundary wall shows the effects of salt and frost action arising from reliance on the weatherproof properties of the rendering at the top and the lack of dpc at the bottom.

RENDERING AND PLASTERING MATERIALS

Some knowledge of the properties of the rendering and plastering materials and of their mixtures is very necessary in drawing up specifications. The Ministry of Works, in their series of Advisory Leaflets, the Building Research Station, in certain of the National Building Studies, and the British Standard Codes of Practice, have done much to clear the confusion of thought which has existed and which may be said still to exist, regarding these properties.

The materials in use are lime, cement and sand externally, together with "hardwall" or gypsum plasters for internal use only, and they are mostly covered by the appropriate British Standards.

Limes.—Lime may be regarded as the traditional material for this country and its properties will vary according to the locality from which the limestone for burning is obtained. Quicklimes from the almost pure calcium carbonate limestone found in Derbyshire and the southern counties need only simply slaking and a sufficient soaking time before use. Hydrated limes from these same sources can be used directly from the bag, although it is preferable to soak them at least overnight.

When, however, a limestone is not pure calcium carbonate, special care in slaking is required. Greystone, for example, containing clayey material, or Dolomite, found in areas roughly from Durham to the Midlands, give rise to hydraulic limes or magnesium limes respectively, and these both require their own special treatment.

Fig. 2 depicts a panel illustrating the defect of "popping" and "pitting" arising from unsoundness in lime.

The lime had been supplied as hydrated lime and theoretically could have been used directly from the bag. Generally in testing such materials unsoundness is shown in the failure to meet the fineness requirements of BSS 890, but this material passed these tests satisfactorily. The British Standard test by steaming for detecting unsoundness would not appear infallible. Most consistent results have been obtained by preparing panels 12 in. by 12 in. as illustrated, placing four together face inward in the form of a box and steaming for some hours. (Fig. 3). The panels are dried out overnight by heating and the cycle of steaming and drying repeated several times if necessary.

Pure limes stiffen merely by drying out and hydraulic limes show the property of setting under water and achieve a fairly high strength. Time has a hardening effect on lime plaster due to the conversion back to calcium carbonate by the slow reaction with atmospheric carbon dioxide. The simple chemistry of the process has been illustrated in chart form in the British Standard Code of Practice, "Internal Plastering" CP211 (1949). Hydraulic limes were widely used as "Roman cement" together with sand for the stucco fronts popular from the Regency period to the early years of the century, and most of our bigger towns have examples of this work, but it should be noted that usually

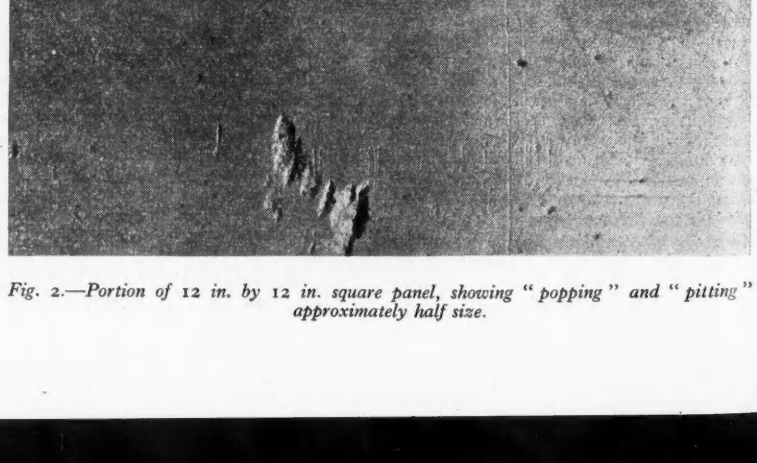


Fig. 2.—Portion of 12 in. by 12 in. square panel, showing "popping" and "pitting" approximately half size.

preservation has been assisted by continuous painting. A recent Digest from the Building Research Station (No. 46, September, 1952) summarises the properties of limes and the slaking processes far more adequately than is intended here, and reference might also be made to an earlier one of the same series No. 26 (January, 1951), "Blowing, Popping, or Pitting of Internal Plaster."

Cement.—Portland cement, the more recent material, is a controlled product of burning limestone and clay, sets under water, and achieves a high strength. To say more here would be valueless as there are many publications describing the manufacture and properties of this material.

Sands.—Although it can be said that external renderings are composed generally of lime, cement and sand, it would be very unwise to dismiss the latter so cursorily, as it can so often be the cause of trouble arising after application. Being relatively cheap and not economical to transport over long distances, the quality of sand is only too often ignored. The comment that such-and-such a building sand is the best obtainable locally, and has been used with success by generations of plasterers, is frequent. Often it proves to be extremely fine and dirty, and its popularity arises from the workability given it by the clay, and its consequent cheapness in that less cement or lime need be added. There are British Standards for sands, and a nest of sieves will assist in rejecting the more unsuitable ones, but it must be noted that there is a distinction between rendering and plastering sands. The table shows the grading of these sands, and the finer ones specified as plastering sands are best retained only for lime and gypsum plaster mixes. Where one of the chief constituents is Portland cement, the rendering sand specification is preferable both for internal and external work.

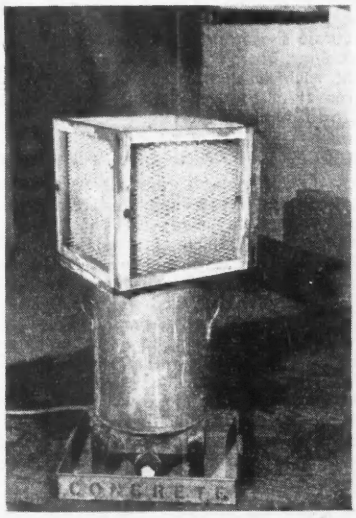


Fig. 3.—Panels on steamer.

such as alum, are added. The accelerated anhydrous gypsum plasters Class C and D set progressively, and more time is available for obtaining a polished finish.

Finally, there is a naturally occurring material, anhydrite, which ground and accelerated produces gypsum plaster Class E. A chart illustrating the composition of gypsum plasters is shown on page 58 of the British Standard Code of Practice for Internal Plastering, CP 211(1949). It is now general practice for plaster bags to be marked with the Class letter, and a list of proprietary names and their classes is

BRITISH STANDARD SAND GRADINGS

(Reproduced from BS 882, 1198, 1199, 1200 and 1201, 1944, by permission of the British Standards Institution)

Percentage Passing B.S. Sieve	B.S. 1198 Plastering				B.S. 1199 Rendering	
	Undercoats		Finishing		Class A	Class B
	Class A	Class B	Class A	Class B		
⅜ in.	—	—	—	—	100	100
7	98–100	98–100	100	100	90–100	90–100
14	80–95	80–100	95–100	95–100	70–100	70–100
25	30–85	30–95	30–85	30–95	40–85	40–95
52	5–50	5–65	5–50	5–65	5–50	10–65
100	0–10	0–15	0–10	0–15	0–10	0–15

GYPSUM PLASTERS

For internal plastering there is an additional material, hardwall or gypsum plaster. The term "hardwall" is not encouraged in the gypsum industry, and it can be a misnomer in that obviously sand:cement or even sand:lime, plaster gauged, mixes can give as hard a surface as gypsum plasters.

Gypsum, the basic material, when heated loses water, and if the heating temperature is limited, about one quarter of the water is retained. The product at this stage, plaster of Paris, Class A, gives a fast set when mixed with water and commercially the plasters known as retarded hemihydrate plasters, Class B, contain a retarder designed to reduce this speed of set to a workable one. These retarders prolong the time before setting commences, but once it occurs it is still rapid. If gypsum is heated more strongly, the whole of the water in its composition is lost and anhydrous gypsum obtained. This material sets too slowly for convenience and accelerators, usually salts given in Ministry of Works Advisory Leaflet No. 2. "Plasters used in Building."

SPECIFICATIONS IN PRACTICE

In criticising the drawing up of specifications, one also wonders whether anyone reads the original after the first pricing. For example, in one instance when checking on the mix proportions specified as 1:1:6 by volume cement:lime:sand, mixing and spreading were found to be happily proceeding with one bag of cement, say nine shovels to the bag, 11 shovels of sand with an odd shovel of lime. This admittedly is unusual, and it is much more likely that mixes used are weaker than specified. Cement is an expensive item!

It is not always appreciated that the volume of sand can change appreciably with the amount of water present. For example, some sands show between a quarter and a third volume increase over the dry volume for a 7 to 10 per cent. increase in moisture content, and this is allowed for in designing volume-batched concrete mixes. No account of this fact is taken in site rendering or plastering mixes, and there is much to recommend weigh-batching to ensure regularity of mixing. In the absence at present of simple means to that end on small jobs, the use of mixes already prepared in factories has much to commend it, provided that clear statements of proportions are given by these suppliers.

Care has to be taken in clearness of specification in some parts of the British Isles. For example, in Scotland a 1:1:6 by volume cement:lime:sand mix is likely to be interpreted on the site as one bag of cement, one bag of lime, and six barrows of sand. Admittedly a bag of cement may be a level filling for some barrows, but striking off the sand surface is unusual. Sometimes the size of mixing batches is horrifying. The author came across one mix being prepared with 3 cwt. of cement, one bag of lime, and nine barrows of sand. This was turned by hand by two labourers and was being applied by one spreader on to the gable wall of a block of flats. The area being covered was roughly 700 sq. ft., and when all was applied, dashing with pebbles started. There was little wonder that the plasterer liked a good clayey sand to keep the mix "open" for all-day application, or for that matter that the whole showed crazing on the following day. Needless to say, it is not advisable to make up large batches of any of the materials of rendering or plastering. Retempering, too, of partially set material only results in weakening the mix.

APPLICATION TECHNIQUES

In this country external renderings based on Portland cement and sand, usually of the order of 1:3 by volume, applied and finished with a steel float, had been so subject to crazing and cracking that a few years before the last World War, Mr. F. L. Brady, who was then an officer of the Building Research Station, made, with Mr. L. F. Denaro, a survey of the technique of application of external renderings as practised on the Continent. Their findings were embodied in a Building Research Station Bulletin issued by the Stationery Office, and may be very briefly summarised as showing a variation from the existing British practice in the greater use of lime with cement in external work, the use of throwing techniques, the avoidance of smooth finishes, the use of crushed stone sands and greater care in designing and making flashings. Following adoption of some of these recommendations, mixes of the order of one part cement, one part lime and six parts of sand by volume are now more widely specified and used for external and internal work.

It must be said that there appears to be more chance of success since mixes containing lime have been adopted, but complete immunity from trouble is still not certain. Again, in some parts of the country, plasterers appear to be taught never to mix cement and lime together. To them it is difficult to explain the reduction of the incidence of crazing. Both cement and lime mixes shrink on drying, and drying shrinkage can cause crazing. Perhaps the lime makes the material more flexible in its early drying and probably provides a better overall adhesion. In any case, the lime addition does mean a more absorbent surface, so that rain does not run down and into cracks to be trapped by the impervious surface of a strong cement:sand rendering. Also, as the water is held near the surface drying can occur more rapidly after rain.

Fig. 4.—Failure of strong finish on weak backing effected by frost.

MACHINE APPLICATION

Following the war, much use has been made of machine-thrown or gun-applied materials as decorative finishes. The point must be stressed that one or two applications of these materials can only be described as primarily decorative. To provide the full protection of a "laid on" coat a number of applications to build up an appreciable thickness are required. Unfortunately, these finishes have been applied too frequently in industrial areas and during bad weather, with the result that their appearance has suffered. Dirt retention is high on the rough surface, and application during damp weather has resulted in "blooming." The latter effect can be due to the solubility of lime, either from the background or from the finish, which is deposited on the surface as the carbonate or calcite. The only solution to that problem is to try and apply these finishes under reasonable weather conditions. Another fault in application often seen is the tendency to apply a coat too heavily, with running together of the material. The spattering of the surface to achieve the desirable open regularity can be controlled with care by the operative in continually adjusting his distance from the wall face.

One of the most useful applications of Brady's observations has been the "spatter-dash" treatment to provide a key for subsequent rendering coats. Where a number of different backgrounds are adjacent to one another, and particularly where smooth concrete occurs amongst them, a dash of coarse sand and cement in the proportions of 1:2 to 1:3 by volume provides good adhesion for later coats. It is very necessary to dampen the surface before this application, and a further dashing of water on the following day will prevent softness.

When throwing from a trowel has proved a little difficult to master by a plasterer, reasonably successful results have been achieved using the Tyrolean-type machine or a brush.

SCRAPED FINISHES

Architecturally the appearance of scraped finishes is preferable to the patchiness produced by floating to a smooth surface. At present the best results are obtained by ready bagged mixes which are consistent in proportioning, and therefore materially assist the plasterer in avoiding the difficulties of accurate site proportioning and irregularities in colour. There is still no absolute guarantee that such finishes will not craze, but the removal of the dense cement surface does help to minimise the risk.

MODIFICATION OF SPECIFICATIONS

A difficult point is the degree to which it is safe to include lime in external work. Brady noted a case of a mix of 1:10:33 by volume cement : lime : sand in Hamburg, but there has been adverse comment on the use of 1:2:9 by volume cement : lime : sand mixes, particularly in exposed positions in the North. Fig. 4 shows a breakdown of such a mix as a backing coat to a machine-thrown finish. It is not clear that such a backing would have successfully withstood the conditions of exposure alone when not covered by the less permeable finish, but it would generally be advisable to avoid increasing beyond the previously mentioned 1:1:6 proportions.

Generally, when the quality of sands is doubtful it is not practicable to be too rigid in proportioning. A harsh sand may need a slight decrease in quantity and a 1:1:5 by volume cement : lime : sand mix would be most easily applied. Similarly, a soft loamy sand would be better used in slightly bigger proportion, say 1:1:7, as above, to offset the greater crazing and shrinkage risk due to the quantity of finer materials.

WATERPROOFERS AND WETTERS

The value of waterproofers in rendering mixes still appears uncertain, and it cannot be taken that there is no value at all in such additions, as is so often said when considering good quality concrete mixes. For one thing, although a good wetting down of the backing in strong drying weather is the best means to ensure adhesion of a finish coat it is possible to go too far or to follow up too soon and get slipping, especially if the base has little suction. The use of waterproof cement or addition of waterproofer, a more awkward matter for control, can sometimes assist in reducing an excessive suction to reasonable proportions.

The use of wetting agents to assist in plasticising mixes or even in elimination of the lime content is appearing.

Experimental work is at present being conducted by the Building Research Station on the possibilities of such additions. In fact, when wetting agents are added, it is possible to apply mixes as lean as 1 part cement to 6-9 parts harsh sand by volume. Care must still be exercised in adopting the idea, as obviously mixes composed of 1 part cement to 8 parts sand will have low strengths. With these mixes the additional increase in strength with age produced by carbonation of the lime could not occur, and the weather-proofing properties are as yet not defined.

INTERNAL PLASTERING

Failures. Large-scale crazing internally usually follows from unsuitable mixes and poor sand gradings. The finer skin-deep map crazing seen mostly on gypsum plasters or on plaster-gauged lime mixes, fortunately easily obscured by decoration, often results from over-trowelling too late after application or, by its more frequent occurrence on window reveals or near doorways, when drying conditions are too acute. There is always a risk of obscuring the actual set of gauging plaster when large areas are laid on and final trowelling is delayed.

Crazing followed by shelling of the finish coat is not uncommon, and can be the result of applying finishes too strong for the background. In some cases the high suction of the weaker backgrounds, and not only lack of strength, can cause trouble. For example, a heavy coating of 1:2:9 cement : lime : sand on expanded metal, followed by a skim coat of a Class C plaster, is inadvisable. The high suction of such a backing results in loss of water, leaving insufficient for hydration of the skim, and, as mentioned earlier, such plasters set slowly. Subsequent decoration and condensation during occupation supply water which recommences the setting, and the phenomenon of delayed expansion can occur, with resultant cracking, hollowness and shelling of the plaster coat. For this kind of work, in view of the need for early strength, particularly if such construction is overhead, it is probably advisable to use Class B plaster sand backings and finish with the same mix or neat Class B plaster.

Incidentally, this is also probably the safest type of specification where local sands are of poor rendering quality and where it may be necessary to cover a number of different internal materials. Offsetting the cost are the advantages of small risk of loss of adhesion, and the finishing coat can follow on once the backing has set and has not dried out.

With such plasters there have been reports of serious corrosion of expanded metal. Fig. 5 shows rust staining through neat gypsum plaster and the decreased risk obtained with a small lime addition.

Concrete surfaces. Concrete faces internally can cause difficulties. Many specifications still include sand or cement:lime:sand backing coats on hacked concrete, and these, particularly when overhead, are not often successful. Concrete bonding plasters have been devised for which non-shrinkage properties are claimed and are effective providing the maker's instructions are adhered to. Generally, Class B plasters used neat also give satisfactory results. The overall thickness of the work must be kept to a minimum in both cases.

Gypsum plaster, whether of the concrete bonding type or otherwise, must not be used

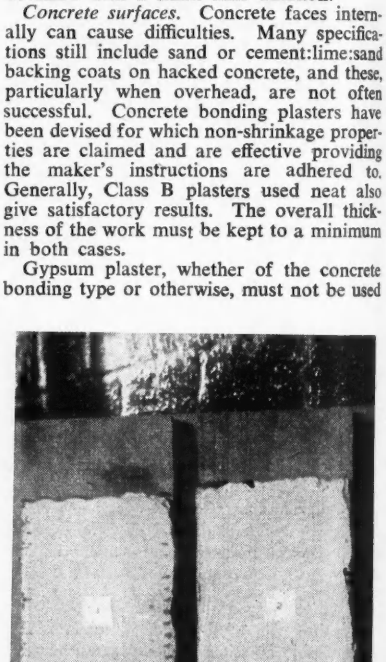


Fig. 5.—Rust stains from expanded metal: (1) Neat Class B plaster; (2) Class B plaster and lime addition.

as a key for external work. Such an error was a recent incident where the plasterer applied concrete bonding plaster to a concrete balcony canopy, and then rendered in cement:lime:sand. The latter fell with almost fatal results to those below. This was another case of the incompatibility of sulphates and cement compositions.

PLASTER ADDITIONS

Incidentally, there is another practice very much to be deplored which some plasterers still adopt with external work. This is the addition of a handful or so of gypsum plaster to cement rendering mixes to speed the set of the cement. A small amount of gypsum is added during the manufacture of cement to adjust the setting time, but large uncontrolled additions are fatal. It may be convenient when dubbing out or making good to be able to complete the job in one operation, but in a year or two the whole work needs renewal with the additional difficulty of removal of the sulphate and the ugliness of patching.

GENERAL DEFECTS

In being critical of the malpractices of plasterers rather than of their materials it must be said that there are many faults for which they cannot be blamed. A common cause of cracking, for example, on partition walls, arises from the use of breeze blocks improperly cured or which have become wet in storage on the site or have been soaked before use. Cracks following block outlines result from such variation from block to block, whereas a crack at ceiling level usually results from moisture movement of the panel as a unit.

Efflorescence arises generally from the presence of salts in brick or block backgrounds, but it can result from the use of estuary or sea sands. In some parts of the country it is difficult to find alternatives, and the risk must be minimised by frequent checking on the salt content of such supplies. The difficulty then is to assess the safe maximum allowable, as obviously conditions will have a big effect. There are known cases where trouble has been serious with percentages of salt of the order of 0.1 per cent. by weight. This percentage could amount to, say, a couple of pounds of salt distributed round the walls of a large room.

Paint and distemper failures, again, are most frequently the result of lack of appreciation of the limitations of these materials by either designer or painter, and lack of adequate drying time of the plaster.

This account has perforce been limited, and one notable and obvious omission is that the many problems directly associated with lime plastering have not been discussed, though its use must not be regarded as discredited. The aim has been to consider mostly those materials considered as speedy for house finishing. For all this desire for speed, it would be very pleasant to see some return to the use of the plasterer's finer skill in obtaining decorative and attractive effects, internally and externally, common enough in past generations, but so often neglected to-day and left to the decorating trade.

Mr. Westbrook is the Building Research Officer of Messrs. George Wimpey and Co., Ltd., and has lectured on this subject in the Ministry of Works' Winter Lecture Programme. The article itself, and the illustrations, are the copyright of Messrs. George Wimpey and Co., Ltd.

THE ENGINEER IN CANADA

Prospects for British Emigrants

THE important part played by the professional engineer in Canada's expanding programme of development, is emphasised by Mr. Derek H. Robinson, BSc (Eng), GradICE, P Eng (Ont), in an article entitled "The Professional Engineer in Canada," which appears in the November issue of The Journal of the Engineers' Guild.

After describing the organisations that are available in Canada to protect the interests of the engineer and to ensure that he conducts his affairs in a manner commensurate with his responsibilities, Mr. Robinson, writing of the position of the graduate engineer, states:

The Canadian engineer, after graduating, will find himself in a position of responsibility much the same as that of a graduate from a British university, and his duties will be similar. Most of his time in the first few years will be spent in applying his theoretical knowledge, and learning how to combine theory and practice to formulate the best results. He will, in all probability, be under the watchful eye of one with greater experience to guide his actions and promote his ability. The young engineer is greatly encouraged to create and develop new ideas and his resourcefulness is relied on to a large extent.

Most engineers on graduating in Canada find themselves employed in a technical capacity. Very few go into sales or start off in the executive class. However, as time goes on and the engineer reaps a benefit from his experience, his interests move towards positions of a more supervisory or administrative nature. A recent survey conducted in the Province of Ontario indicated a very significant drift of professional engineers to positions of executive or administrative responsibility, and from personal observations it seems that a very large proportion of professional men, having gone through a period of technical training and developed a logical approach to the problems in their particular field, are now serving on the administrative side. An engineer in Canada receives good recognition in this direction if he specialises in one particular branch of applied science. This leads to there being many more specialist engineers in Canada than in Britain.

A Rival Attraction

Another influencing factor is remuneration. Some young Canadian engineers are lost to the United States during the first few years after graduation as salary rates are higher there, but in later years, many return to positions of greater responsibility carrying attractive scales of remuneration. Perhaps the main deterrent to the flow of engineers across the border is the fact that any young Canadian engineer who accepts employment in the United States becomes subject to compulsory military service.

Generally speaking, the professional engineer in Canada has a far higher status in the eyes of the public than his counterpart in Great Britain. Through the columns of the Press, and by the visual evidence of the results of his toils, the public realises that the engineer plays just as important a role in the pattern of a well-balanced and prosperous community as does the physician, the lawyer or the architect, and, as a professional man, deserves similar recognition. Not a small part of this recognition is due to the united efforts of the Associations and their members, who do their utmost to maintain the reputation and recognition of the engineer as a professional man: the continued efforts and persistence of the Engineers' Guild can similarly do a great deal in Great Britain to improve and consolidate the status of the British engineer, who has been appraised by peoples the world over, but only in small part by his own countrymen.

What are the prospects for a British engineer to practise in the Dominion and what differences might he expect to encounter in applying his technical skill and experience to Canadian methods?

The engineer in Canada is faced with a multitude of problems. The methods he uses must be adaptable to suit local conditions, which may vary considerably across such a huge continent. The extremes of climatic conditions and other natural obstacles have hindered his work a great deal in the past, but with the use of new techniques these obstacles are being steadily overcome. Concreting in sub-zero temperatures, for instance, has been successfully overcome and is now carried on through the winter months as just another routine job. Moreover, areas which were previously accessible only by foot or canoe are now within a few hours' flying time of the larger cities and towns. Aerial photography has also had a marked effect.

Materials and Labour

Methods and practices are greatly influenced by the availability of materials and labour. Timber in most parts of Canada is plentiful and cheap, and, as a consequence, is used much more widely than in Great Britain. Indeed, in some areas construction in timber is a formidable competitor with concrete or steel due to the high costs involved in transporting these two. When designing, the engineer not only has to consider the local cost of materials but, on the more remote contracts, must make allowances for a shortage of skilled labour and for the fact that control and inspection may not be all that he would desire. He generally aims, therefore, at simplification in his designs with correspondingly increased factors of safety.

Canada is extremely cosmopolitan in outlook and a practising engineer becomes acquainted with ideas and techniques originating in places far removed over the globe. He can expect to meet with the most up-to-date European and American practices in combination with methods intended to stimulate rapid productions and development.

The young British engineer making a move towards Canada has a potentially rich field of experience to be gained, but he should also be prepared to adapt himself to the new circumstances which will confront him. The older British engineer with a broader knowledge and experience would almost certainly have difficulty in adapting himself to the Canadian environment and in establishing himself in a position of responsibility similar to the one he occupied at home. Once established, however, prospects of advancement are good and he should find his station in life much improved after a few years.

The training which every engineer undergoes, whatever his chosen branch of applied science, encourages him to create and develop, and it is creation which is the main theme of Canada's expanding economy at the present time. For the engineer who is adaptable, therefore, and who may desire experience, adventure, or just a new way of life, Canada has a good future to offer.

H

OPPORTUNITIES IN AUSTRALIA AND NEW ZEALAND

Industrial Expansion Makes Much Work for Builders

[From an Australian Correspondent.]

THE vast developmental schemes now getting under way in both Australia and New Zealand provide many opportunities for builders and suppliers of building materials. Some of the largest projects, for example, the Snowy Mountains hydro-electric and water-storage development in Eastern Australia (one of the largest undertakings of its kind in the world) are in remote, unpeopled areas, so one of the first essentials is always the construction of housing for the large work-force and their families.

Trade union rules in Australia require that married workers on such projects be provided with suitable family accommodation within a reasonable time, and as most of the projects are scheduled to take decades, the housing thus provided, even for single men, has to be of a semi-permanent character. In many cases model townships, with all their concomitants of schools, hospitals, community centres, shopping areas, and the like, are carefully planned and executed by a special well-staffed branch of the particular project.

As a New Zealand example one may quote the £6,600,000 timber and wood-pulp scheme at Kinleath—part of a rapidly developing industry in which huge sums are being invested, and one which will soon rank fourth in order of importance for that Dominion. At Kinleath about 125m. super feet of logs—307,000 tons—are now being cut and processed annually for kraft pulping, with a further 258,000 tons for timber-milling. All mill buildings are of steel, covered with asbestos-cement sheeting, and have concrete roofs. Seventy per cent. of the pulp-mill plant and equipment, and nearly 100 per cent. of the paper mill at Kinleath are of British manufacture.

This centre has its own radio station, telephone exchange, teleprinter terminal, railway station, fire brigade, motor and engineering workshops, and air strip. An up-to-date and fully equipped laboratory checks and tests raw materials, those in the course of processing, and the finished product. To develop this project water had to be piped from 5½ miles away, and pumped through 32-inch pipes. Some 40,000 feet of piping is used in the mills alone. Railway and electrical services also had to be built, the provision of each being a major undertaking requiring much labour and material.

A MODEL TOWN

The same company (New Zealand Forest Products, Ltd.) has also undertaken, through its own building department, the erection of a model town at Tokoroa, comprising 600 houses for married employees. The town has grown in the past four years from 290 people to more than 4,000, and is a "planned" settlement embracing sports grounds, a community centre, maternity hospital, cinema, schools, churches and other amenities. This company spent £12,000 on the community centre alone, for the use not only of its own employees, but all residents of the area.

Similar developments, but on a much larger scale, are now taking place at Kwinana, near Perth, Western Australia, where the Anglo-Iranian Oil Company is building a £40m. refinery, capable of processing 3m. tons of crude oil a year—enough to meet 40 per cent. of Australia's total requirements. There, the State Government, through its housing commission, has undertaken to build 1,000 homes for the company's employees, scheduled for completion by 1955. About 300 have now been built. This new township of Medina is being designed as a showpiece. The site contains four neighbourhood units, each with about 1,000 home sites for an average population of about 5,000 people. The ultimate aggregate is estimated at 40,000, which will make it the State's third largest city.

The building of the refinery is in itself an immense undertaking, which by next year will employ a peak work-force of 3,000 men. This is being done by a specially formed group—the Kwinana Construction Group Proprietary, Ltd., consisting of Kellogg International (an American company registered in Great Britain) and three British firms, namely, Costain-John Brown, Ltd., D. and C. and William Press, Ltd., and Kinnear, Moodie and Co., Ltd. Three ships weekly are now arriving at Fremantle from the UK and the USA with materials and parts for the refinery, which will be one of the largest in the Southern Hemisphere. Most workmen are being recruited locally and are working under overseas technicians.

NEW CEMENT PLANT

Concurrent developments include the establishment at Kwinana of a £4m. steel-rolling mill by the Broken Hill Proprietary Co., Ltd., the first step towards the building up of a fully integrated iron and steel industry in Western Australia based on the great iron ore deposits at Yampi Sound, in the State's far north-west. This year, also, the Cockburn Cement Proprietary, Ltd., was formed locally, with substantial backing by the Rugby Portland Cement Co. of England, to produce an initial 100,000 tons of cement a year. This plant will cost over £2m. Another £30,000 will be spent by Uni-Versil Insulating Co. Proprietary, Ltd., in building a factory to manufacture insulating materials for factories, power stations and for marine purposes.

To facilitate these undertakings, which provide the foundation of what is expected to develop into one of Australia's foremost industrial areas, the State government is investing about £15m. This will be spent on township-building, harbour dredging, the construction of railways, roads, a water reservoir and pipeline, and the provision of health services, electricity and other amenities. The individual companies are undertaking parallel developments, for example, Anglo-Iranian has built a temporary rubble jetty 550 ft. long which will be used for landing materials and equipment for the permanent 1,700-ft. L-shaped jetty designed to service three tankers at a time, and materials and equipment for the refinery and tank farm.

Broken Hill Proprietary Co. has planned a 600-ft. jetty, warehouses, fresh-water treatment plant, electric sub-station, administrative, amenities, testing and store buildings, besides its major installations. Those will consist of an 18-in. three-high break-down mill, a 12-in. roughing mill, and a 12-in. finishing mill, all electrically driven. Work is progressing steadily on B.H.P.'s 529-acre site, and the programme of test-boring to determine the location of the jetty has been completed. Building the Cockburn Proprietary's cement factory is expected to take two or three years. It will then more than double the State's cement production—now some 80,000 tons a year.

It is common experience that wherever oil refineries have been established, the closest town doubles its population within ten years, mainly through other industries being attracted to the centre. This is confidently expected at Kwinana—has already commenced, in fact—so building there will certainly boom. The chemical industry is the most likely to develop, since more than 5,000 different lines can be made from oil by-products.

END OF RECESSION

The recent building trade recession in Australia is now "on the way out," and its exit will be speeded by the latest Commonwealth budget. This provided very definite incentives to industrial enterprise, and should send the local building trade spurting ahead, with consequent demands for both labour and materials. Developments such as those at Kwinana, and others in the eastern States, where progress has been slowed down, and even halted, in the past few years, will heighten those demands. The "pegging," also, of the basic wage, which in Australia was formerly adjusted—always upward—four times a year, will now help by making costs and programmes more predictable.

In New Zealand there has been no comparable recession, and the slow growth there of the national building force has not been due to any lack of demand. On the contrary, it has heightened demand, so that skilled and semi-skilled tradesmen are now at a premium. City streets and city newspapers abound with notices calling for carpenters, who are offered good wages and conditions, and abundant overtime. Many are working up to 60 hours a week, at penalty rates for anything over the 40. New Zealand, of course, has no indigenous base metals, so most tools and components made from those metals need to be imported. That country, also, is entering a period of great expansion. As one Cabinet Minister lately remarked, for the first time for a long time New Zealand has the materials, the money, and the opportunity to build in a big way. And that will mean opportunity for us also "down under."

PERSONAL COLUMN

F. Hills & Sons, Ltd., Norton-rd., Stockton-on-Tees, have recently appointed the following representatives: MR. A. J. WALPOLE, 17, Cottingley Vale, Leeds, 11 (Tel.: Leeds 77751), for Yorkshire (West Riding); and MR. H. A. WOOD, 115, Chester-rd., Sunderland (Tel.: Sunderland 3372), for North Eastern Area). Mr. Wood replaces MR. T. L. BLAKE, who has now been appointed door sales manager.

Dimplex, Ltd., Totton, Southampton, Hants, have announced the appointment of MR. R. C. FLOOK as sales manager for Southern England. Mr. Flook will operate from his home address: 100, Garthorne-rd., Forest Hill, SE23. The telephone number will be advised as soon as installed.

MR. J. S. SKINNER and MR. GEORGE MCLEAN have been elected directors of Remington Rand, Ltd., Commonwealth House, 1-19, New Oxford-st., WC1. Mr. J. S. Skinner holds the position of managing director, and MR. S. D. PARKER the office of permanent chairman of the board.

The directors of Expandite, Ltd., Chase-road, NW10, manufacturers of joint sealing compounds and appliances, announce that MR. R. G. H. SALMON has retired from the board. MR. F. S. WEDLAKE has recently been appointed to the board

MR. J. H. S. NORDBERG, technical representative for the Croft Granite, Brick and Concrete Co., Ltd., in the West Midlands, has changed his address to 363, Chester-road, Castle Bromwich. Tel.: Castle Bromwich 2853.

RIBA Examinations

Mr. John R. Tiedeman, of Ilford, Essex, who passed the RIBA Final Examination in December, 1950, has been awarded a mark of Distinction for his Final Examination Thesis.

THE ORDNANCE SURVEY

Its Relationship with Archaeology

EVER since January 1, 1801, when the first Ordnance Survey map was published on a scale of one inch to the mile, it has been the practice of the Survey to show the position and character of antiquities on its main series of maps and scales, said MR. C. W. PHILLIPS, MA, FSA, Archaeology Officer, Ordnance Survey, when he read a paper on "The Ordnance Survey and Archaeology" at the Royal Institution of Chartered Surveyors on December 7. In this it might fairly claim to be unique among the national surveys of the world.

Mr. Phillips commenced his paper by giving a brief account of the circumstances which had brought this about, and went on to describe the organisation and practice of the Archaeology Division of the Survey to-day. Referring to the temporal scope of the Division's work he posed the question, "What is the precise period it is to cover?" The following extracts are taken from his subsequent remarks:

Before 1940 this stretched from the earliest times to AD 1688. Since 1947 it has been found desirable to extend this lower date to within a century of the present day. The AD 1688 limit was artificial and took no account of the fact that the field archaeology of the Early Industrial Age has received only slight attention although many of its more important sites are fast vanishing. The use of the term "field archaeology" in this context may appear strange, but many parts of the country still show a wide range of such things as old waggon roads and tramways, early factory sites and abandoned mines. Many of these are classic in the history of our time. If prompt action is not taken, the progress of new building and the clearance and tidying of many of the now sordid traces of the Industrial Revolution prior to 1850 will soon make it difficult to record these remains, and logic requires that if exertions are made to trace the course of Roman roads, no less should be done for much later, but now equally obsolete, forms of transport.

Two Main Factors

Two main factors have been responsible for the post-war increase of the Archaeology Division to the present staff of 41, and they are closely related. The new modes of procedure in revision make much greater calls on it than before 1940, and it must have the materials ready with which to meet them.

In archaeology an accurate knowledge of the topography of monuments, sites, and casual finds is essential. This has often been lacking in the past; precise knowledge of where a thing has been found can be very fugitive, and must be gathered in as soon as possible to be of real scientific value. Our museums are full of important objects known to have been found in these islands, but bearing no provenance, or, at best, such vague statements as "Wales," "East Anglia" and the like. In this state they are little more than objects, but with an exact National Grid reference showing their exact find spot they can become vital links in a chain of archaeological detection.

To make a proper success of its work the Division must have a large and up-to-date body of information about the state of archaeology in all parts of the country, well-checked by good field work, and it must be able to apply this information quickly and efficiently to maps of all scales by good collaboration with the Field and Reproduction sides of the Survey.

We will now consider its recording and field work in turn.

Recording

The Division must succeed in this, or it cannot perform its basic task of briefing the rest of the Survey on the siting and character of antiquities. The gathering of this information is a complex task. It involves a consideration of the written records of the country's archaeology which stretch back for more than 200 years, and a general vigilance over developments at the present day. The latter is exercised through the work of its field staff aided by a large body of correspondents throughout the country and further informed by the scrutiny of all relevant publications.

The materials collected are recorded on cards in two forms, one in which the emphasis is on topography so that the archaeological content of any area can be found without delay, and the other concerned with the classification of finds by period and individual character so that the total showing of the country in any particular department can be easily found. The first is chiefly concerned with giving ready and accurate topographic information to the Field side of the Survey, and the second provides a fund of specialised information from which correct descriptions of antiquities may be obtained and period maps compiled.

The building up of the records of the Division must be a long-term project. Before 1940 its small size restricted its recording work, and when revision took place it was unusual for there to be much accumulated information on which to draw. Too much depended on the personal knowledge and immediate research of the Archaeology Officer. The ideal position towards which the Division now strives is one in which all the earlier literature has been investigated for relevant matter while good correspondents keep us regularly posted on all present developments, and all areas have been thoroughly perambulated at least once by the field staff. We should be able to meet all calls from our own records without the need for hasty research.

As the new organisation has only been in existence for three years this position of strength has not yet been attained. But recording has been greatly developed to meet the increased demands made on it by the main work of the Survey, and through a steady process of attrition the back-log is being made up so that many parts of the country, scarcely touched between 1920 and 1940, are being brought into line. At the same time a comprehensive and country-wide record of archaeological topography is being created which is a public archive of great scientific importance providing a sound basis for archaeological research, and resorted to increasingly by scholars and members of the public.

Field Work

The field work of the Division must now be considered. Up to 1940 this was almost entirely in the hands of Mr. O. G. S. Crawford, who was appointed Archaeology Officer to the Survey in 1920, and in those of his unofficial helpers outside the Survey. A remarkable body of material was collected, but the advent of air photography, bringing in its train a great expansion of archaeological knowledge, put it beyond the power of the existing staff to keep up with all these developments in the field. Since 1947 a staff of field surveyors has been recruited which to-day numbers 14. They are called surveyors, but a better title would be investigators, as they have to look into a large number of matters while strict survey does not enter largely into their work. Their task is to examine allotted areas for their archaeological content which can vary greatly from place to place. A first duty is to visit all antiquities already marked on the map and see that they are correctly shown as to position, detail, and description. Many of these antiquities are wrongly described because they reflect the outmoded views of the local antiquaries who gave information to the makers of Name Books in the nineteenth century. There is much to amend and many areas are overdue for this kind of revision.

Air Photographs

But this is a comparatively easy task. Much more difficult is the investigation in the field of the numerous indications appearing on air photographs which yield a large crop of ancient burial sites, farmsteads of various ages, early field systems, new stretches of Roman road, lost Roman villas, linear earthworks overwhelmed by the plough, and many medieval sites ranging from castles to deserted villages.

To deal with this, the Division has what survives of the pre-1940 air-photograph collection and also access to a full air cover of Great Britain with the 1/10,000 RAF series of photographs as a base. Although these photographs often prove to be informative, they were not taken under conditions which give the best results for revealing archaeological detail, and we are therefore fortunate to be able to use the specialised air cover taken for archaeological purposes which is being built up by Dr. J. K. St. Joseph in the University of Cambridge.

Experience has shown that it is no longer economical for investigators to go into the field until they have examined all relevant air cover. Without this it is quite possible that more than 75 per cent. of the content of an area will remain undiscovered by unassessed field examination. Every effort is made to give good briefing, but until the Division has a section devoted solely to the interpretation of air photographs this vital work has to be farmed out among the staff.

The increased capacity of the Division to organise a reliable body of information and to carry out effective field examination of its problems has had an important effect on the work of the Field Division. Before 1920 much time was spent by revisers in trying to carry out their instructions about the treatment of antiquities. They did not themselves possess the requisite knowledge for this work and they often found great difficulty in making contact with anyone locally who could help them. The situation was not greatly improved between 1920 and 1940 in spite of much effort by Mr. Crawford.

To-day all responsibility in these matters has been taken from the Field Division. The Archaeology Division, acting with advance knowledge of the field programme, provides a complete brief for the treatment of the antiquities in any area under revision and turns what was often a time-wasting and inefficient affair into an automatic process.

Much time must pass before the improvements made by the new process become noticeable in all parts of the country. This applies to the larger scales, but already the Division has revised most of the sheets of the 1-inch series on reprint, and it is now engaged on a more complete overhaul of this series for its seventh edition.

DIRECT LABOUR

Department Charged with Overspending

STRONG criticism marked the presentation to Wolverhampton Town Council on December 28 of a joint report by the Housing and Public Works and Estates Committees showing overspending totalling £14,680 on two housing contracts, carried out by the Corporation's direct building department.

The committees reported that the contractual cost of £105,131 for 78 dwellings on the Willenhall-road North estate was exceeded by £10,188 and the contractual cost of £55,819 for 48 dwellings on a site at Tettenhall by £4,492.

They expressed the opinion that in view of the competitive field it was virtually impossible for a direct building department to operate solely on the basis of the lowest tender.

Presenting the report, ALD. H. E. LANE, chairman of the housing committee, said that among factors contributing to the overspending was the scattered nature of the location of the houses on the Willenhall-road site and the "appalling" nature of the subsoil. Work on the site was delayed for a year owing to the shortage of steel, and increases on items not covered by the "rise and fall" clauses during the delay amounted to £1,526.

While disappointing, overspending did not mean that the Corporation had made losses on the two contracts—the figures were to be calculated by reference to the next lowest tenders which would otherwise have been accepted. If the contract for the 78 dwellings had been allocated 50-50 between the two firms whose tenders were the next highest to those of the direct building department, it would have cost £6,907 more than the contractual cost on the basis of the department's tender. A balance sheet for the whole of the 10 contracts undertaken by the department for the Corporation would show no loss, Ald. Lane said.

Suggesting that there were "none so blind as those who would not see and none so reckless as those who had the spending of other people's money," COUN. J. IRELAND asserted that overall figures for the department since its inception showed an overspending of £11,000.

Urging that they should be realistic about the matter, he said there was no justification for carrying on with the department in its present form.

COUN. W. H. HALE, chairman of the public works and estates committee, said it was lack of continuity of work which had brought the department to that position. It was the first adverse report the council had had since the department was set up in 1947. It was vitally important that they should take into account the savings effected by the direct building department on the first six contracts carried out for the local authority.

COUN. T. G. WILLIAMS challenged the housing and public works and estates committees to instruct the town clerk, the borough treasurer and the borough engineer to "ignore completely the principles and desires of any party" and prepare a report on whether it was wise to continue the department so far as the building of houses was concerned. That, he suggested, should be the end of the continual argument on the subject and the report should be the guiding principle.

Pleading with the council to support the amendment, COUN. J. BEATTIE, chairman of the finance committee, said that the direct building department appeared to be losing money and there seemed to be no reason why it would not continue to do so. No harm could come from having such a report as suggested: a lot of good might come from it.

The amendment was lost and the housing committee's report was approved.

Competitive Tenders Sought

Direct building, which has aroused so much lively controversy latterly, was again under fire at the last meeting of the Tipton Town Council, when COUN. J. L. ALLEN asserted that competitive tenders should be invited for all municipal building. It was wrong, he insisted, for any concern, whether public or private, to exercise a monopoly. He did not object to building by direct labour if the housing committee was convinced it was the quickest and cheapest method. Without competitive tenders, however, it was impossible to decide whether direct labour was best, he urged.

HOUSING IN MOROCCO

Acute Shortage of Modern Accommodation

[From a Correspondent]

THE position of Morocco is of great importance to Western defence and to the North Atlantic Treaty Organisation. Under French administration the population has enormously increased, and among one of the most urgent problems is that of providing adequate housing.

The French Protectorate has done well in providing road and railway services, remembering that at the beginning of this century the only land communication routes in Morocco were tracks for animals.

Morocco's roads now cover some 28,000 miles, of which 6,000 miles are hard-topped roads built according to the most modern technical principles. The railway network is 1,137 miles long, of which 447 miles are electrified.

But housing is the most acute problem of all. The working classes in Morocco are almost entirely of rural origin, and few have known anything better than tents or mud houses. The "bidonvilles" or shanty towns which surround the large cities of Morocco are disgraceful according to modern standards of decent accommodation.

During the coming year the Housing Service and the inter-professional Housing Committee will devote special attention to carrying out the programme which has already been approved. Capital is being provided by many industrial concerns in Morocco for the construction of villages for workers. Dearth of materials has been the principal factor in limiting more rapid progress.

Between July, 1945, and July, 1949, only 4,125 modern houses were built. From then until a year ago the Housing Service built 3,629 houses and construction was begun on 2,167.

The Casablanca Scheme

At Casablanca the largest building scheme of all is now in progress, and it is hoped that during the coming year at least 10,000 new houses will be completed. Well over 2,000 already stand on the "Carrieres Centrales" building site.

The real estate companies are already pushing ahead with new housing. The first lot of Jewish housing projects, mainly blocks of flats, has been completed at Casablanca. A four-year plan covering the period up to 1956 has been approved. This is designed to complete the operation started during the first four-year plan, 1949-1952. But Morocco will depend for the next three years largely on loans from foreign financial markets, and it is officially stated that 45 per cent. of the funds needed to execute the new plan come from abroad.

THE STOCK BRICK INDUSTRY

Plans for Further Expansion

IN his annual report the president of the Stock Brick Manufacturers' Association, MR. G. W. A. MILLER, states that in 1952 the United Kingdom production of all bricks reached 82 per cent. of the 1938 figure and 540 per cent. of the 1945 figure, whilst the corresponding figures for stock bricks were 61 per cent. and 582 per cent. respectively. The 1953 output of bricks, he says, will show that further steps have been taken towards the Association's goal of producing sufficient of the traditional London stock bricks to meet the ever-increasing demand for the repair and rebuilding of London and the expansion of the Kent and Essex towns.

Mr. Miller continues: "It is a source of considerable satisfaction to those representatives of the industry to find it becoming recognised that in the extraction of brickearth the disturbance to agriculture is negligible and that land from which brickearth has been excavated is left in such condition as to become available immediately either for farming or building. There can surely be no better evidence than is found in the common practice of farmers to sell or lease their land to stock brick makers on condition that it is handed back again when the brickearth has been extracted.

"The recognition of the importance of our industry to the national economy, and the fact that its operations involve land use and not land sterilisation, should impress upon those whose duty it is to see that the country's resources are used in the best interests of the national economy, the urgency of securing for the industry sufficient reserves of raw materials to cover its operations in perpetuity. Well over half a million pounds has been invested in plant and machinery since the war, which is some measure of the confidence that we have in that justice will be done; but the further investment, encouraged by the production departments, cannot be undertaken without considerable anxiety unless our raw material reserves are secure.

"The capital investment in the industry has already produced, in addition to bricks, security of employment for our workpeople, the vast majority of whom are now working all the year round regardless of weather conditions. Our labour force is still below strength, although the wages and conditions compare favourably with those in other industries, and in an effort to correct this we have recently adopted a recruitment and training scheme under which youths coming to us from school can be trained under the personal supervision of the owners and managers and thus make a career of brickmaking. Such steps as these, together with the welcome arresting of the upward movement of the cost-of-living index, which has now remained practically constant for 12 months, cannot fail to encourage our young workpeople to return to the industry after their National Service and reap the fair reward of their labours."

THE FESTIVAL HALL HEAT PUMP

Its Installation and Operation

AN account of the heat pump installed by the Ministry of Fuel and Power at the Royal Festival Hall through the stages of developing the various components and the installation and operation of the plant, was given by MR. P. E. MONTAGNON, BA, BSc, and MR. A. L. RUCKLEY, AFRAeS, when they presented a paper to the Institute of Fuel on December 22, at the Institution of Mechanical Engineers, London.

The prime movers for the heat pump were Merlin aircraft engines converted to run on town gas and arranged to drive centrifugal compressors. The development of the engines' compressors and the high-speed rotary sealing units proved to be the most difficult task. The output of the plant was some 9 million BThU/hr, which proved to be vastly in excess of the average requirements of the Festival Hall, in spite of the original estimate that the peak load on the hall would be over 25 million BThU/hr. An analysis of the performance of the plant has led to the suggestion that a plant of this type might be installed for a cost of some £52,500 and that it would burn town gas at an effective efficiency on peak load of about 1.25. A favourable overall economic picture for such an installation can be made when summer-time refrigeration is a desirable feature of the building concerned, in which case it is suggested that the heat pump should be designed to have an output based on the refrigerating load rather than the heating load.

After giving a brief introduction to the subject the authors went on to describe in detail the plant and its development and from their description of its installation and operation we take the following extracts:—

The Installation

The plant was installed in the brick arch of Hungerford railway bridge nearest to the river. Although this appeared to be conveniently situated near to the Festival Hall and to the river, the pipeline for hot water to the connection in the boiler-room had to be several hundred feet long; and to satisfy the various authorities concerned the river-water supply had to be picked up almost in midstream, again several hundred feet from the plant room. These geographical difficulties added substantially to the cost and the complexity of the installation.

At the installation stage it had to be decided how many stop-valves would be required in the refrigerant circuit. This being an experimental plant, it was expected that at some stage every item would need isolating and inspecting; this would have involved innumerable valves, and so the alternative scheme was adopted of incorporating a separate set of storage vessels into which the refrigerant could be pumped and held while the main plant was opened up.

When the installation was completed the refrigerant circuit was tested under air pressure at 300 lb./sq. in. (gauge). Subsequently Freon, the chosen refrigerant, admitted to the circuit leaked substantially in places where air had not apparently been able to escape. The compressor casings (in cast aluminium) although twice impregnated with Bakelite were never made completely "Freon tight."

Noise was a feature of the plant which was expected from the first to be troublesome. Test-bed running of the engines and compressors did nothing to dispel these fears; but with the plant housed in a heavy brick archway and with sound-absorbing material on the walls and double glazing in the windows there proved to be no undue external noise. It was recognised, however, that inside the plant-room the noise level would be too high for operation of the plant. A sound-proof control cabin was therefore installed containing all controls and instruments. The control-room was provided with double walls with a sand-filled cavity and a large double-glass observation window.

Little difficulty was expected from vibration. The engines themselves had been balanced for use in aircraft and the centrifugal compressors were naturally more or less vibration-free. However, to make sure, the engine and compressor units were mounted on steel frames sunk into heavy concrete blocks, which were themselves sunk into the floor and rested on thick cork mats. This proved entirely satisfactory; in fact, during the operation of the plant a vibrograph attached to the walls of the plant chamber was much more violently affected by the passage of a train overhead than by the running of the power units.

The object of the automatic controls which were installed some time after the plant had been put into operation, was the negative one of stopping the plant in as orderly a fashion as possible in the event of failure somewhere in the system. Pressure- and temperature-sensitive switches were installed at critical points in the circuit and any one of them operated a relay system which set in motion the necessary sequence of events to shut down the plant. A blown fuse in the appropriate circuit indicated which switch had been responsible for the shutting-down operation. These controls were primarily intended for use when the plant was doing duty for summer cooling, so that it could be started up and left unattended for some time. Experimental work, however, necessitated the presence of an expert observer and no opportunity has yet arisen to test these controls in practice, although each of them was tested individually.

Operational Stage

Apart from the inevitable minor faults in a plant of this kind which had to be put right one by one, there were certain inherent difficulties in operation which necessitated the development of special operating techniques. There were also certain failures of the components.

The chief difficulty in using the plant was one which was never overcome, namely that events proved that the maximum load required by the concert hall was vastly below the estimate which had been provided at the start. Eight to 9 million BThU/hr. output from the heat pump overwhelmed the requirement by several million BThU/hr., with the effect that a steady load for the plant was never achieved and all records had to be taken during a rising-temperature régime. More important, long runs of the plant could not be managed. This situation was aggravated by the inherent characteristics of centrifugal compressors used in such conditions. The pressure ratio was determined by river-water and concert-hall-water temperatures. To achieve this pressure ratio with any reasonable efficiency a fairly well-defined mass flow had to pass through the compressors, so that the heat output from the system was almost fixed. The only way of reducing the heat output was partially to open the bypass line between the second compressor output and the first-stage inlet, but this of course spoiled the exercise of operating the heat pump with any substantial efficiency. This feature of the compressors had been appreciated from the start, but it must be remembered that it had been the intention to run the plant as a base-load heat source, which would have meant that it could have run at design conditions for lengthy periods.

A consequence of this situation was that it was never possible to keep conditions sufficiently steady to ensure that the plant was operating at maximum efficiency; for instance, by making the final adjustments to the engine speed and to the gas mixture control. It also proved tvery difficult to take readings, particularly of the water temperatures, which were rising throughout each run. It should be pointed out that a 1 degree C. error in the temperature-difference between flow and return represented an error of some 8 per cent. in the output of the plant. It was, however, possible to get substantial records of the plant performance under various conditions.

Failures

There were two major failures of the plant during the operating period. The first of these was the failure of the centrifugal clutches in the gearbox driving the first-stage compressor. Subsequent analysis showed that high torque at low speed was a possible condition during starting-up. The clutches were replaced, stronger retaining springs were installed and the trouble did not recur.

The second major disaster was the complete stripping of the first-stage impeller after some 50 running hours. Inspection of the damage led to the conclusion that one of the rotating guide-vanes had failed when the plant was on load and all the remaining damage was consequential on this. This trouble was traced to the unfortunate fact that a resonant frequency of the vanes was very near a typical operating speed. The trouble was overcome by fitting a shroud round the rotating guide-vanes, thus increasing stiffness substantially.

The only other failure worth recording was that the rotating seal on the second-stage compressor retracted under certain conditions of high interstage pressure, with the consequent loss of refrigerant. The design was such that once the seal had retracted, the pressure had to drop substantially before the seal was reseated by the retaining spring. Unfortunately these high-pressure interstage conditions were likely to arise after the plant had been running on high load and then stopped, when for a time the condenser pressure spread itself throughout the whole circuit until condensation in the evaporator became effective in reducing it. It proved possible to overcome this difficulty by fitting a stronger retaining spring to the seal although this presumably led to higher frictional losses and, no doubt, the proper answer would have been to alter the chamfering on the carbon-ring faces.

Other faults were comparatively minor ones and were dealt with as they arose. The engines themselves operated satisfactorily during the whole period except when difficulty with starting was found after a long period without use. This was always traceable to a simple cause such as dirty distributors, etc. Failure of the river-water pump at low tide was of little more than annoyance value, as was the continual leakage of exhaust gas from the flexible bellows connecting the engine-exhaust manifolds to the main exhaust line.

The cost of the whole project was of course much in excess of what might be ex-

pected for a duplicate of the installation. The total cost was roughly as follows: —

	£
Main heat-exchangers, refrigerating equipment, etc.	14,300
Development and installation of engine and compressor units ...	39,000
Installation of plant, pipework, builders' work, etc.	24,700
Connections and pipework inside concert hall	3,000
Modifications and special work after installation (including automatic controls)	18,500
Sundries (including instruments) ...	3,700
Total	£103,200

Heat Pump to be Discontinued

The Ministry of Fuel and Power are discontinuing operation of their experimental heat pump which has provided summer cooling of the Royal Festival Hall. As purchase of the heat pump would be uneconomic the General Purposes committee of the LCC have approved a proposal that an orthodox refrigerating plant should be installed in the hall. Meanwhile, cooling will continue to be provided as necessary by the heat pump which will be hired from the Ministry at an estimated cost (including operating costs) of £2,400 a year.

"School's Electrical System."

We are advised by the City Engineer and Surveyor of Chester that the report published in our issue of December 25 to the effect that the Factory Inspector has advised the Chester Educational authorities "that the electrical installation at the new £150,000 Overleigh Secondary Modern School is faulty and that children may be electrocuted" is incorrect. The installation, we understand, is in fact in perfect order and in accordance with what has been generally standard practice in this country. What has happened is that the Factory Inspector, who was called in by the Council to inspect the installation, has drawn attention to the advisability, in his opinion, of lowering the voltage to certain portable equipment, in accordance with the very latest workshop practice for portable tools on loose leads. We much regret that our report was inaccurate.

Calendars

We acknowledge, with thanks, receipt of calendars from Messrs. James L. Bacon (photographer); Y. J. Lovell and Son, Ltd., Ribblesdale Cement Ltd.; Taylor Woodrow Construction Ltd.; Oldacres and Co., Ltd.; Mayfair Spraying and Decorating Co., Ltd.; Pickard and Co. Leeds, Ltd. (Photographers); D. W. Price; and Earle's Cement.

RAF Reserves Club

Since HRH the Duke of Gloucester opened the RAF Reserves Club's new premises at 14 South-street, W1, in March, 1953, the club is establishing itself as a rendezvous for serving officers and ex-officers of the Reserve and Auxiliary Air Forces, former officers of the RAF, RFC, and RNAS, and past and present officers of the Dominion and Colonial Air Forces. Food and accommodation are provided at reasonable charges, and the activities of the Club are almost entirely social. The president is Air Chief Marshal Sir Guy Garrod, GBE, KCB, MC, DFC. Applications for membership are invited, and details are obtainable from the Secretary at the club premises.

LMBA

The New President

MR. R. S. WILLIAMS, MIOB, FRSA, nominated as president LMBA, is chairman and managing director of the West London firm of J. P. Williams, Ltd., established in 1883, and now engaged chiefly on new building and reconstruction work in London and the home counties.

Apart from a considerable number of private contracts, his company is engaged on work for Government departments and local authorities, and recently has carried out extensive rebuilding in London for the Governments of Ontario and of certain other Canadian Provinces as well as for several foreign embassies.

Mr. Williams was born in Kensington and was enducated at Epworth College, North Wales. He later attended the Brixton School of Building as a full-time student. In the 1914-18 war he joined the Artists' Rifles, and was subsequently commissioned in the Royal Garrison Artillery. In the last war he was area leader for Kensington under the Works and Building Emergency Organisation Scheme. Mr. Williams is a Liveryman of the Worshipful Company of Wheelwrights and a Freeman of the City of London. He is vice-chairman of the trustees of the Campden Charities, which provide considerable funds both for the relief of the sick and necessitous in Kensington, and for the further education of promising students in Kensington. He is a member of the Reform and the City Livery Club.

Mr. Williams has been prominent in the LMBA affairs for the past ten years. In 1944 he was area chairman of Central Area No. 1 and the following year was elected to the council, on which he has served ever since. In 1948 he was elected to the Administrative Committee and the National Federation Council, and since 1950 and 1951 respectively he has been a member of the National Contracts Committee and the Joint Contracts Tribunal.

ACCOUNTING & COSTING SYSTEMS FOR SMALL & MEDIUM-SIZED BUILDERS

Prepared by:

The National Federation of Building Trades Employers London, W.1

PRICE 5/- (by post 5/6)

Published by:

The Builder Ltd., Builder House, Catherine St., Aldwych, W.C.2

TEMPLE BAR 6251 (6 lines)

Lunch to Minister

THE PRESIDENT of the LMBA, Mr. Gerald A. Hill, will take the chair at a luncheon in the Park Lane Hotel, Piccadilly, on Tuesday, January 19, to meet the Minister of Works, the Rt. Hon. Sir David Eccles, KCVO, MP.

GARDEN ACCESSORIES

The Need for Better Design

THE Design of Garden Accessories was the subject of a paper given by MR. GORDON RUSSELL, CBE, MC, RDI, director of the Council of Industrial Design, to the Institute of Landscape Architects at the Housing Centre on December 17.

Mr. Russell felt that gardening at the present time in England was the nearest approach we had to a popular art, and indeed had held its own against many mechanised distractions, but the design of gardens was seldom of a high standard. One reason for this was the small stock of well-designed garden furniture and equipment available to-day. Everyone who visited the South Bank Exhibition, he said, must have noticed the white steel chairs with the yellow plastic seats set among the large Stockholm flower pots which were one of the most charming of the outdoor features. In fact, the whole approach to the garden layout of the site reached a standard which was quite unprecedented for such an exhibition in England.

He said he would like to see the Institute of Landscape Architects paying far more attention to this side of garden work. Firms making such articles should always have the advice of a competent designer (such as a landscape architect) not only to make them of fine shape, texture and colour, but to relate them as far as possible to the products of other firms which would later be used with them in gardens.

He was glad to say that the Royal Horticultural Society had invited his Council of Industrial Design to collaborate with it in staging a small exhibit of the best designs in garden furniture at the next Chelsea show; the selection to be made from the CoID illustrated index *Design Review*, which contained current British goods of a high standard of design. This selective display would encourage the production of well designed garden furniture and equipment in the same way that the CoID Outdoor Seats Competition in London this year was seen to produce good results.

One problem was to encourage the small gardener to restrict the number of items in his garden, and to spend more on the ones he chose. It was necessary to cultivate an architectural sense as well as a sense of order. It was not, of course, possible for landscape architects to design many small gardens individually, on account of the cost, and nobody wanted standard plans of gardens to be produced, but the improvement of the design of accessories would be of the greatest possible help in raising the general standard of garden design.

Year Book

A year book for 1953-54 has been issued by the Institute of Clerks of Works of Great Britain, Incorporated. Edited and published by Mr. G. W. Harris, 43, Leopold-road, Harlesden, NW10, it contains the names and addresses of all the members of the Institute, up to and including the election in July. Comprehensive tables, formulae and other technical and professional information are also included in this useful booklet.

NEWS IN BRIEF

Building Digests

Digest No. 61, recently issued by the Building Research Station, is an index to the previous digests Nos. 1 to 60. Copies are obtainable from the Stationery Office, price 3d.

Election of Officers

At a general meeting of the National Association of Master Asphalters held recently Mr. A. G. Poole was appointed chairman. At the same meeting Mr. J. Duncan Ferguson, FCA, was appointed secretary. The Association's registered office is situated at Abbott's Chambers, 202 Bishopsgate, EC2.

New Appointments

The new architect to the Timber Development Association, 21, College Hill, EC4, is Mr. Alan Roscoe-Hudson, ARIBA, former staff architect for Rotol, Ltd., Gloucester. Another appointment is that of Mr. Paul Morpurgo as research assistant. Mr. Morpurgo will assist in the work to be undertaken on the comprehensive development programme planned by the TDA.

Concrete In Ireland

Lightweight concrete may be produced commercially in Ireland. Samples of clay from a pit in Roscommon have been tested as suitable for making the concrete, and resulting experiments have confirmed the tests. Officials of the Institute for Industrial Research and Standards, in co-operation with members of the Geological Survey, have visited the pit. Experiments by the Institute to evaluate the merits of the concrete in regard to crushing strength, density and economy are continuing. Experiments are also being carried out with Irish clay for the manufacture of ceramics.

Desk Diary

An up-to-date reference work and desk diary specially produced to assist architects, surveyors and others connected with the building industry, has been compiled by Hadden, Best and Co., Ltd., 16, Strutton-ground, Victoria-street, SW1. In addition to the diary section, the contents consist of a comprehensive index to the amended London Building Act, 1930; the LCC Building By-laws; and the "Model By-laws" series 4 Buildings (1952 and 1953 editions). They incorporate various schedules appertaining thereto, and particulars of important British Codes of Practice. Three editions of the diaries are available from the publishers, with prices ranging from 4s. 3d. upwards.

Clinker Blocks

The increasing use of clinker blocks has brought occasional complaints of faults assumed to be caused by the blocks. In the majority of cases it has been found that the trouble was largely due not to the blocks but to the method in which they were handled and used. The Federation of Clinker Block Manufacturers has consequently issued an instruction card for the use of the clerk of works and foreman, giving information on unloading, stacking and using clinker blocks, together with information sheet No. 4, providing recommendations based on the BS Code of Practice. These, together with a pamphlet containing a short treatise on the manufacture and uses of clinker blocks, can be obtained from the Federation at 16, The Ridings, Surbiton, Surrey.

Development Plan Approved

The Minister of Housing and Local Government has approved with modifications the development plan for the County of Montgomeryshire. The plan, as approved, will be deposited in the Council Offices, Welshpool, for inspection by the public.

Timber Preservation

A record of their 1953 annual convention, held at Cambridge, has been issued by the British Wood Preserving Association, and includes accounts of the papers read in the convention, as well as of the subsequent discussions which took place. Apart from the preservation of timber, the subjects dealt with include actual methods of applying the preservatives. Copies are available from the Association's offices at 6, Southampton-place, WC1.

Liverpool Development

During the current year Liverpool hopes that building schemes in connection with the redevelopment of the blitzed areas in the city centre will be in full operation now that restrictions regarding licences are being lifted. Building programmes involving an expenditure of more than £4½m. have already been prepared, in addition to the Corporation housing programme on the outskirts of the city which will cost over £5m. Most of the work, it is hoped, will be started almost immediately, and it is not anticipated the labour problem will interfere with its progress.

Road Surface Dressings

The prepared formation of a new road can be badly damaged during wet weather before the pavement is laid, as the surface of the subgrade, softened by rain, is easily churned up by construction traffic. Such harmful effects can be avoided by protecting the formation by the application of a surface dressing. Road Note No. 17, "Protection of subgrades and granular bases by surface dressing," has been produced by the Department of Scientific and Industrial Research, Charles House, 5-11, Regent-street, SW1, and describes the types of soil formation and base suitable for treatment, and the preparation and drainage of the surface of the formation. Details are given of the number of dressings required and the types of binder and aggregate with their appropriate rates of application. Copies of the Road Note are available from the Stationery Office, price 9d.

THE ORGANISATION OF BUILDING FIRMS

A series of articles, contributed by leading Builders in various parts of Great Britain, on the organisation of the medium sized builders' business. Reprinted from "The Builder."

Price 2/6; By post, 2/9

Book Dept.,
The Builder House,
Catherine Street, W.C.2
Tele.: TEMple Bar 6251 (Ext. 5)

Designs for Chairs

A selection of chairs in wood and metal, designed by the Royal College of Art, will be shown at the Building Centre, Store-street, WC1, from January 11 to 23.

New President

The president of the Society of Engineers during its centenary year in 1954 will be Mr. W. R. Howard, chairman of Helical Bar and Engineering Associated Companies. Mr. Howard will deliver his presidential address on February 1, and on May 7, will preside at the Society's centenary banquet.

Steeplejack Recruits

Anxiety at the lack of young men suitable for recruitment in the steeplejack trade was expressed by Mr. Malcolm Macdonald, chairman and managing director of M. Macdonald and Co. (Steeplejacks), Ltd., Bennett-street, Mapperley, Nottingham, at the firm's annual meeting on December 24. Mr. Macdonald regretted that though the company had received many applications, the desired mentality was not forthcoming, possibly due to the high standards demanded. The firm did not operate a bonus system as this was considered to lead to doubtful work and dissatisfaction. Instead, 40 per cent. of the net profits was equally divided among the employees, who received this year a dividend of 12½ per cent. upon the gross average weekly wage, equivalent to 1½ months' salary.

New Works

The formal opening ceremony of the new Nevenden Works at Basildon, Essex, of Bonallack and Sons, Ltd., was performed recently by Mr. Alan Lennox-Boyd, PC, MP, Minister of Transport and Civil Aviation, Bonallack and Sons, Ltd., manufacture all-metal light alloy commercial vehicle bodies and ancillary transport units. The new works is one of the largest of its kind in this country, and among the features specially incorporated in the layout are individual spray booths for the painting of commercial vehicles prior to being dispatched to the customer. These paint spray booths are separated from the main factory and each is equipped with heating and air conditioning devices to permit painting to be done under the best conditions.

PLYWOOD IMPORTS

Board of Trade Announcement

THE BOARD OF TRADE have announced that they are now prepared to consider applications for Open Individual Licences for imports of plywood, laminboard, blockboard and battenboard from countries other than the sterling and dollar areas.*

The licences issued will not be limited in quantity or value and will be valid for imports during the period March 1, 1954, to February 28, 1955. Until February 28, 1954, specific import licences will continue to be issued for quantities in proportion to the applicant's purchases from National Stock.

Details of the method of applying and of the countries involved (these are mainly Eastern and Western Europe) are given in Notice to Importers No. 623 issued by the Import Licensing Branch of the Board of Trade to-day, January 8.

* These goods can already be imported from the sterling area without a separate import licence. Imports from the dollar area still require separate specific import licences, and these will only be granted for essential purposes.

OVERSEAS BUILDING

[From Our Own Correspondents]

**Canada.*—Jewel Sales Company, 464, McGill-street, Montreal 3, Quebec, would like to contact UK manufacturers wishing to appoint an agent to cover Ontario, Quebec, the Maritimes and Newfoundland for the following goods:—

Builders' Hardware.—(1) Door knobs of cast brass, aluminium (preferably anodised); (ii) Locks and fittings, particularly sectional front-door sets. (These are the large combination inset locks and latches which are usual on the front doors of Canadian houses); (iii) Wheel barrows. (The heavier type for contractors and the lighter type for domestic use. These should be of the US type or style and packed in the US fashion, that is to say, in knocked-down state, packed in individual cartons); (iv) Shovels; (v) Steel mosquito screening; (vi) Galvanised stove pipe; (vii) Farmers' tools such as rakes, hoes and hay forks.

Plumbers' Fittings.—(i) Kitchen sinks, pressed steel, white enamel, the popular size being 14 in. x 18 in.; (ii) Galvanised hot water boilers (range boilers). 30 gallon capacity; (iii) Copper tube in coils; (iv) Plumbers' brass goods; (v) Malleable iron pipe fittings. (Note: These goods would have to be made to Canadian standards, but this is, in most cases, a matter of the right thread, etc.).

Interested UK firms should write direct by air mail to the company at the address given in paragraph 1 above, giving prices in dollars, c.i.f., delivery dates and all available literature. Inquiries by telephone should be made to Chancery 4411, Extension 350.

**USA.*—The US Army Corps of Engineers has issued a call for tenders (CIVENG—25—066—54—103) for the supply of one 25-ton gantry crane complete with lifting beam for placing and removing the draft tube gates of the Gavins Point Reservoir. The closing date for the receipt of tenders is 2.30 pm CST on January 21 next, and tenders, in triplicate, should be addressed to the Office of the District Engineer, US Army Corps of Engineers, Omaha District, 1709 Jackson-st., Omaha 2, Nebraska. All inquiries by telephone should be made to the Export Services Branch of the Board of Trade, Tel.: Chancery 4411, Ext. 738 or 771.

Export Chairman

Mr. Frank Taylor, chairman of Taylor Woodrow, Ltd., building and civil engineering contractors, has been elected chairman of the Export Group for the Constructional Industries for the year 1954.

Canadian Customs Import Entries

The following information is contained in Memorandum Series D. No. 73 issued by the Canadian Department of National Revenue on December 3, last, and is of importance to exporters to Canada:—In order to facilitate the more rapid compilation of trade statistics the Department of National Revenue has agreed to furnish the Dominion Bureau of Statistics with a copy of each customs import entry for use and retention by the Bureau. Commencing April 1 next import entries will be required to be presented at customs in triplicate at ports and quadruplicate at outports, in place of in duplicate and triplicate as at present.

* From the Board of Trade Special Register Information Service.

TRADE NEWS

Change of Address

Williams and Williams, Ltd., of Chester, have announced that their South London office, under the management of MR. A. M. SCOTT is now situated at 81, High-street, Bromley, Kent. The area covered by this office is London south of the Thames, and Kent north of a line drawn through Maidstone, Canterbury and Ramsgate.

Company's Journal

The Winter 1954 number of the CAC Magazine, quarterly house journal of the Cape Asbestos group of companies, has been published in a new format. The issue contains illustrations and articles on the activities of the firm's employees. This year the parent company, the Cape Asbestos Co., Ltd., 114-116, Park-street, W1, is celebrating its 60th anniversary, and a photograph of the Certificate of Registration is reproduced within its pages, as well as a review of the year.

Firm's Golden Jubilee

Now celebrating its golden jubilee is Dussek Bitumen and Taroleum Co., of Bow, London. In the early years of this century the increase in motor traffic made the problem of road-dust more acute. Crude tar was used to overcome the dust menace of water-bound roads rather than as a surfacing material. The adhesive and weathering properties of bitumen resulted in the development by the company of "Bitite" filled bitumen grouts in 1906 and "Surbit," a bitumen compound for surface dressing, in 1908. To avoid delays caused by heating-up and weather conditions precluding the use of a hot compound on a cold, damp surface, the Dussek company developed a surface dressing to be applied cold, namely, "Colade" During the war years, Dussek products included waterproof linings to convert the basements of bombed buildings into emergency static water tanks. The chairman, Mr. A. J. Dussek, was elected Master of the Worshipful Company of Paviors in 1951.

ROOFING MATERIALS

All types of Roofing Materials are available for Immediate Delivery from our London Stocks.

BEST WELSH SLATES AND DAMPCOURSES.

ASBESTOS CEMENT-SHEETS AND FITTINGS.

ASBESTOS R/W GOODS.

THE BODDY ROOFING COMPANY LIMITED
81 ESSEX ROAD, LONDON, N.1
Telephone: CANonbury 4281

The SCOTTISH BUILDER

Target for Scots Councils

"KEEP your output of houses next year at the record level of 1953, and at the same time strive to reduce building costs substantially." This target for the New Year is sent Scots local authorities in a circular (91/1953) which has just been issued to them by the Department of Health for Scotland.

The circular refers to the "remarkable success of the 1953 programme" and says that the Secretary of State wishes to express his "warm appreciation" of the efforts of local authorities, both sides of the building and engineering industries, and others responsible. "The improvement made in 1952 in the rate of progress has been more than maintained and once again a record number of houses has been completed."

Building costs are, however, too high, and no further substantial increase in the labour force can be expected. It is, therefore, vitally important to avoid any waste, whether of labour or of those materials, especially bricks and cement, which are still occasionally liable to be scarce.

A five-point programme to help local authorities achieve these ends is suggested. It involves avoidance of Sunday work; limitation of overtime; the inclusion, where possible, of fixed prices for materials in contracts; the rejection of tenders that are too high; and economies by improved design.

The circular says that both sides of the building industry have emphasised that systematic overtime over a period (and especially week-end working) results in disorganisation, higher costs, lower level of production and sometimes abuses, especially if it is misused to attract labour from other jobs. Furthermore, local authorities in Scotland are almost unanimously opposed to payment to contractors for Sunday working on their housing schemes. It is, therefore, recommended that where overtime is considered necessary, the total number of hours worked should not exceed 54 per week on weekdays, including work up to 4 p.m. on Saturdays. Work on Sundays should be avoided. These limitations would not always apply to important preparatory work or to urgent defence projects. Sunday work or longer hours during the week might, however, be justified for a short period where special difficulties on a particular job, or in a particular trade, might produce dislocation that might ultimately lead to greater expenditure.

"The Secretary of State hopes, therefore, that local authorities will now proceed on the lines suggested and consistently refuse to recoup contractors for any expenditure on overtime which they have not authorised."

The Secretary of State, says the circular, is "seriously concerned" at the "evident reluctance" of many councils to reject tender prices even when these are obviously too high. "Local authorities may sometimes be acting against their own interests by creating an impression that they are prepared to build houses at unreasonably high costs.

"While he would prefer that local authorities themselves should take the necessary steps in this matter and while it would be to their advantage to do so, he wishes to put it beyond doubt that in present circumstances

the Department, on the full information available to them, will not hesitate to reject any tender prices that seem too high.

"In this connection, the Secretary of State suggests that local authorities could now do more to prevent differences between tender prices and final costs by obtaining offers on a fixed price basis, at any rate for most if not all materials, where there has now been for some time no serious fluctuation."

The promoters of non-traditional houses will soon be making available a full range of houses built to the new improved designs. When these new designs are ready the Department's approval of the designs now current will be withdrawn so that promoters may concentrate on the production in quantity of one range of houses only. These arrangements which should substantially reduce building costs will be more fully described in a separate circular to be issued shortly Meantime, says the circular, the Secretary of State is glad to note that local authorities, to an increasing extent, are adopting designs to standards which avoid waste space and save labour and materials.

Local authorities should now give closer consideration to the ultimate requirements of their areas for houses of the different sizes. They should take into account not merely the houses which they already own, but other houses in the district which they may reasonably expect will remain available for occupation for some time to come.

In assessing the sizes of houses suitable for particular families local authorities should not depart from the standards laid down in 1944. In this connection the circular stresses that the Secretary of State would not approve the building of two-apartment houses for young married couples.

Reference to Monopolies Commission

A NEW REFERENCE has been made to the Monopolies Commission: they are to report on the supply in Central Scotland of sand and gravel suitable for building or civil engineering purposes. Their report is to cover both the facts of the matter and the bearing of the facts on the public interest.

Any person or organisation wishing to offer evidence on this subject should write to the Secretary of the Monopolies and Restrictive Practices Commission, 3, Cornwall-terrace, Regent's Park, London, NW1.

Broadly speaking, the relevant area extends from either side of the Firth of Clyde to the Firth of Forth. It is defined in the reference as: "The whole of the counties of Clackmannan, Dumbarton, Fife, Kinross, Lanark, Midlothian, Perth, Renfrew, Stirling and West Lothian; the county of Argyll excluding the islands; and the county of Ayr excluding the area lying south of the main road, classified as A.70, which runs from Ayr to Edinburgh through Coylton, Cumnock and Muirkirk (but including the whole Burgh of Ayr)."

Council House Rents

AFTER FIXING the rents at £35 for 20 Weir timber houses now under construction, Wick Town Council decided to advertise for applicants in case there would not be sufficient from their own points scheme who would be willing to pay the rent. However, most of the 109 applicants were from the council's waiting list.

"Warm-Air" Heating

WITH REFERENCE to an article, which appeared in our issue of December 11, on what was described as the first school in Scotland to incorporate a new form of "warm-air" heating system, Messrs. Flexaire, Ltd., manufacturers of heat transfer equipment, of 108, Victoria-street, Westminster, SW1, inform us that they have been responsible for the supply of warm-air heating cabinets in 23 schools in Scotland.

Many of these, it is claimed, have been in successful operation during the past two winters, in addition a further nine schools incorporating this form of heating are at present under construction in Scotland. The company state that as far as they are aware they pioneered this method of schools heating in Scotland following the use of Tempaflex cabinet warm-air heaters in a large number of schools in England. They mention also that all the schools have been equipped in full accordance with the Ministry of Education requirements.

The company wish to emphasise that they do not carry out complete installation, but are responsible only for the supply of specially designed warm-air cabinets to meet the specific needs of the school in question.

NEW BUILDINGS

Aberdeen.—Plans prepared and approved by the Corporation for new maternity and child welfare clinic, est. to cost £24,350, to be erected at Northfield. The architect is Alexander B. Gardner (F), Council Housing Offices, Broad-st., Aberdeen.

Ayr.—Plans prepared and approved, for the Western Reg. Hosp. Board's two blocks of buildings to be erected at Forehill. The architect is Forbes Morrison (A) 65, Bath-st., Glasgow.

Edinburgh.—Corporation proposes to erect a scheme of houses, est. to cost £202,000, at Greendyke-ave. and Niddrie Mains-rd. site. The architect is A. G. Forgie (A), Municipal-chbrs., Parliament-sq., Edinburgh.

Falkirk.—Corporation has approved plans for the erection, at an est. cost of £68,000, of 42 houses at the Glenfuir housing site. The architect is A. C. M. Carrell (A), AMICE, Master of Works Offices, Falkirk.

Glasgow.—Plans prepared for new Cleansing Department Depot at Glenleven-dr., Priesthill. The architect is James MacMillan Riddet, MInstCE, Master of Works Offices, George-sq., Glasgow.

Glasgow.—Plans prepared and approved for extension to the Dennistoun factory of J. Dykes, Ltd., 296, Springfield-rd., Glasgow.

Glasgow.—Plans have been approved for new garage and filling station to be erected at Finnieston-st. and Lancefield Quay, Finnieston, by W. Redpath Bruce & Miller, Ltd., Glasgow.

Glasgow.—Plans prepared for new buildings for special purposes, and also storage buildings, to be erected at Possilpark, Cadder-rd. and Lauga-st., by Paterson Hughes Engineering Co., Ltd., Possilpark, Glasgow.

Kilmarnock.—Corporation to erect 114 houses, est. to cost £146,000, at the Outhank housing site. The architect is N. S. Sutherland, FIAA&S, and the quantity surveyor, W. H. MacColl, AMICE, Municipal-bldgs., The Cross, Kilmarnock.

Kirkwall.—TC are putting in hand arrangements for a further scheme of 60 houses.

Lanarkshire.—CC has had plans prepared and approved for 64 houses to be erected at Newfield housing site, Stonehouse, at an est. cost of £89,000. The architect is Samuel MacColl (A), County-bldgs., Beckford-st., Hamilton West.

Lanarkshire.—Plans prepared and approved for new workshops and garage, etc., to be erected at Drumoyne-rd., Langlands-Govan, by The Wilson Terrazzo Manufacturing Co., Ltd., Glasgow.

Paisley.—Corporation to have plans prepared for 282 houses to be erected at the Glenburn housing site. The architect is John C. MacGregor, BSc, MICE, Master of Works Offices, County-sq., Paisley.

Perth.—Corporation to erect 156 flats at Higgs-rd. housing site. The architect is John Penman (F), Municipal-chbrs., South Tay-st., Perth.

Rothesay.—Corporation to have plans prepared for alterations and additions, est. to cost £17,250, to the Pavilion, Argyll-st. The architects are Frank Burnet, Boston & Bell (F&A), 180, Hope-st., Glasgow.

The Builder

FUTURE CONSTRUCTION

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

JANUARY 15.

*†**Bucks CC.**—Additional sanitary accommodation, etc., and improvements to offices and sewage disposal plant, Council School, Wraysbury. County A, Aylesbury. Dep. £2 2s. Tenders by February 8.

*†**Heston and Isleworth BC.**—Erection of CD buildings, Douglas-rd., Hounslow. O. P. F. Hilton, AMICE, BE&S, 88, Lampton-rd., Hounslow, Middx. Dep. £2 2s. Tenders by February 15.

*†**Isle of Wight CC.**—Primary school in Bettesworth-rd., Ryde. County A, Newport. Dep. £3 3s. Tenders by February 16.

*†**Islington BC.**—39 dwellings, Basire-st., N1. TC. Dep. £3 3s.

*†**Southampton CB.**—New annexe, Redbridge infants' school. Boro' A. Dep. £1. Tender by February 15.

*†**Worcestershire CC.**—Primary school, Brandhall estate, Oldbury. County A, 14, Castle-st., Worcester. Dep. £5 5s.

JANUARY 16.

*†**Essex CC.**—Adaptations, Union Offices, Colchester-rd., Halstead. H. Conolly (F), County Architect, Chelmsford.

JANUARY 18.

*†**Bathavon RDC.**—34 houses, Corston, near Bath. M. Whalley (A), 8, Cleveland-pl. East, Bath. Dep. £2 2s.

*†**Coventry Corporation.**—New central police headquarters. City A., Bull-yd. Tenders by February 25.

*Cuckfield RDC.—26 flatlets, Hassocks. E&S. Dep. £2 2s.

*†**Essex CC.**—Foundations for Harwich Dovercourt Hill Secondary School. H. Conolly (F), County A., Chelmsford.

*Macclesfield BC.—List of names for Council's 1954 housing programme. W. Isaac, TC.

*Malvern UDC.—Reconstruction of conveniences, Winter Gardens. C. C. Judson, S & Water E. Dep. £2 2s.

JANUARY 19

*†**Chesham UDC.**—27 bungalows, community centre and warden's dwelling, Fullers Hill. L. C. Powell (F), Norfolk House, Station-rd. Dep. £2 2s. Tenders by February 9.

*Sunderland CBC.—Sports pavilion, King George's playing fields, The Nook. Boro' A, Grange House, Stockton-rd. Dep. £2 2s.

JANUARY 20.

*†**Wimbledon BC.**—Two flats at Nos. 62-64, Wandle-rd.; and two flats at Nos. 26-28, Landgrove-rd. BE&S. Dep. £2 2s.

JANUARY 21.

*Glasgow Corp.—Shops and flats, Ashmore-rd., Merrylee. Architectural and Planning Dept., 20, Trongate, C1.

CRADLES
ERECTED • HIRED
You SAVE our way!
RING Clissold 3303-5
ADVICE FREE!
SCAFFOLD ERECTION COMPANY LTD
37 SHACKLEWELL LANE, LONDON, E.8

***Newcastle Regional Hospital Board.**—Alterations and extensions, South Shields General Hospital, and conversion and extension, North Ormesby Hospital, Middlesbrough. R. Dobbin, Sec. to Board, "Dunira," Osborne-rd., Newcastle-upon-Tyne, 2.

JANUARY 22.

***†Isle of Ely CC.**—Divisional police station and court house, Wisbech. County A, March. Dep. £4 4s. Tenders by February 20.

***†Liverpool Reg. Hosp. Board.**—New 1,000-bedded colony at Greaves Hall, Banks, in three phases. V. Collidge, Secretary to the Board, 19, James-st., Liverpool, 2.

***Shrewsbury BC.**—Four garages rear of Springfield House BS.Dep. £2 2s.

JANUARY 26.

***Essex CC.**—Additions, farmhouse and buildings, Spriggs Farm, Blackmore, near Chelmsford. County Land Agent and Valuer, 69, Duke-st., Chelmsford.

JANUARY 30.

***Slough BC.**—Two cottages, Priory estate, Burham. BE. Dep. £2 2s.

FEBRUARY 1.

***East Barnet UDC.**—12 flats, Park-rd. E&S. Dep. £2 2s.

***Huntingdon CC.**—Four police houses on three sites. County A, Huntingdon.

Keynsham UDC.—94 houses in two contracts on the Park west estate. E&S, Council Offices, Keynsham, Bristol. Dep. £2 2s. and £4 4s.

***Oldham CBC.**—32 aged persons' flatlets, Limeside estate. Cameron & Middleton, quantity surveyors, 21, Queen-st. Dep. £2 2s.

FEBRUARY 2.

***Warrington CBC.**—Workshop and laboratory, New Technical College, Long-la. BE&S. Dep. £5 5s.

FEBRUARY 3.

***Reading CBC.**—Garage with workroom, Weights and Measures Offices, Field-rd. Boro' A.

FEBRUARY 4.

***Harrow UDC.**—Additional sanitary and washing accommodation, Roxeth primary school, Roxeth Hill. E&S. Dep. £2.

***Swadlincote UDC.**—56 houses, Hartshorne estate. E&S, Bank House, Midland-rd. Dep. £2 2s.

FEBRUARY 15.

Newcastle-upon-Tyne CC.—Erection of an ambulance depot in Millers-rd., Byker. City A, 18, Cloth Market, Newcastle-upon-Tyne.

MARCH 11.

***Preston CBC.**—Ashton I county secondary school. BE&S. Dep. £3 3s.

NO DATE.

***East Cowes Housing Assoc.**—60 houses, Kent House estate. V. Aldridge (F), 35a, St. James's-st., Newport. Dep. £2 2s.

Maltby UDC.—Erection of 50 houses at Cliff Hills estate. A&S, Council Offices, Rotherham-rd., Maltby, Rotherham. Dep. £2 2s.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

JANUARY 22.

***Luton BC.**—Ironmongery for 26 houses, Hayhurst-rd., and 150 houses, Runfold-ave. BE. Dep. £2 2s.

FEBRUARY 1.

Mansfield BC.—BE. (Materials.)

***Northern Group Hospital Management Committee.**—Painting of rear elevation of the Royal Northern Hospital. A. F. Gray, Secretary, Royal Northern Hospital, Holloway-rd., N7. Dep. £2 2s.

ROADS, SEWERAGE AND WATER WORKS

JANUARY 25.

Kingsclere and Whitchurch RDC.—Construction and maintenance of approx. 6 miles of spun-iron water mains, etc. Lemon and Blizard, engineers, 59, Tufton-st., Westminster, SW1. Dep. £3 3s.

JANUARY 26.

Sunderland CB.—Road and sewers on the Farringdon extension. BE&S, Athenæum-bldgs., 27, Fawcett-st., Sunderland. Dep. £10 10s.

NO DATE.

Wallingford BC.—Concrete carriageway, kerbing, flagging, drainage and other works on the St. George's housing estate. BS. Dep. £2 2s.

"THE BUILDER" PRICES

LEAD PRODUCTS

Associated Lead Manufacturers, Ltd., have issued the following amended basis prices which came into force as from 8 a.m., January 1:—

Genuine ready mixed white lead paint, 58s. per gallon in 1 gal. tins, delivered UK. Subject to 2½ per cent. monthly account.

Genuine Brit. dry white lead, 159s. 6d. per cwt. Genuine Brit. white lead ground in oil, 162s. 9d. per cwt. Delivered UK in 1 cwt. packs in 1 cwt. lots. Subject to 2½ per cent. monthly account.

GENERAL BUILDING WORK

(LONDON)

Dagenham.—HOUSES.—BC are recommended to approve detailed plans for the erection of houses on 16 acres of land at Valentine's-way by Parrish (Builders), Ltd., 137, Billet-la., Hornchurch.

Dagenham.—DWELLINGS.—TP Com. recommend the approval of a sketch layout for the development of the housing site at New-rd. by the erection of 42 dwellings.

Dagenham.—ESTATE.—TP consent has been granted to proposals by P. G. Ashton & Sons, surveyors, 1, High-rd., Chadwell Heath, Romford, for the construction of a new road as an extension of Chadvillegdns., and the use of the site for residential purposes.

Dagenham.—SCHOOL.—Proposals by Essex CC for an increase in the area at Chadwell Heath Warren Secondary School reserved for school purposes from 9 to 11.8 acres have been approved by BC. The area is scheduled for a county college and secondary school in the Development Plan.

Islington.—LOAN SANCTION.—MH&LG has issued loan sanctions to MBC of £160,627 for the erection of 47 flats and 23 maisonettes at Mildmay Centre; £12,244 for the purchase of 0.3 of an acre of land at Nos. 164-170, Seven Sisters-rd.

Islington.—HOUSING DEPOT.—MBC are to acquire a site in Orleston-mews for the purpose of a housing depot. Estates Com. recommend the appointment of O. E. Parratt, FRICS, Adelaide House, London Bridge, EC4, as quantity surveyor for the scheme.

Islington.—APPOINTMENTS.—Hsg. Com. recommend the appointment of E. C. P. Monson, AA.RIBA, 120, Moorgate-st., EC2, as architects, and O. E. Parratt, FRICS, Adelaide House, London Bridge, EC4, as quantity surveyor in connection with the scheme for the erection of 68 flats on land occupied by temporary bungalows in Petherton-rd.

Walthamstow.—FLATS.—The following schemes submitted by Boro' A, E&S have been adopted by BC and submitted to MH&LG for approval: erection of six flats on the site of Nos. 35-41, First-ave.; erection of ten flats on the Brookfield estate; erection of six flats and two maisonettes on the site of No. 110, Upper Walthamstow-rd.; and erection of four flats on the sites of Nos. 569-577, Forest-rd. Boro' A, E&S also submitted schemes for the conversion of No. 123, Grove-rd. to provide six flats, and "Oaklands," West-ave., also to provide six flats. These have been adopted by BC and forwarded for MH&LG's approval.

Wimbledon.—BUILDING PLOTS.—BC is to apply to MH&LG for consent to sell by auction land known as Cherry Tree Wood, Home Park-rd., for development as six building plots.

Wimbledon.—DEPOSITORY.—BC have recommended North Surrey Area Committee that permission be given to extension of Ely's furniture depository, Gap-rd., and erection of open garages.

DOHM
VERMICULITE
FOR
LIGHTWEIGHT INSULATION
ROOF SCREEDS
FLOOR SCREEDS
PLASTERING (THERMAL & ACOUSTIC)
LOOSE FILLING
also
PRE-CAST PARTITION BLOCKS
SUSPENDED CEILING PANELS
PRE-CAST STEEL CLADDING
DOHM LTD. 167, VICTORIA ST., LONDON, S.W.1 VIC. 1414-5-6 & 7913

Wimbledon.—WELFARE CENTRE.—BC records that deemed planning permission has been granted in respect of development of part of site of 9, Amity-gr. as welfare centre and school clinic.

Woolwich.—DWELLINGS.—MH&LG have approved plans and specifications for the erection of 75 dwellings on a site in Keightley-dr., Eltham, proposed by the Beaver Housing Society.

Woolwich.—FLATS.—Hsg. Com. have approved a scheme prepared by BE for the erection of 36 dwellings on the cinema site at the junction of William Barefoot-dr. and Great Harry-dr. Also a scheme for the development of sites Nos. 1 and 2, Nightingale-pl. by the erection of 11 flats.

(PROVINCIAL)

Accrington.—TC received approval for layout of 84 Gregory flats at Woodside-rd.

Bakewell.—RDC received allocation of 42 houses for erection on various sites in 1954.

Barnard Castle.—RDC has plans approved for 20 houses. Architect, J. Lawton, 45, Galgate.

Barnsley.—TC approved plans, alterations and additions to "Travellers' Rest," Intake-la., for Clarkson's Old Brewery (Barnsley), Ltd.

Billingham-on-Tees.—G. Wimpey & Co., Ltd., Orchard House, Newcastle-on-Tyne, submitted outline plans to UDC for houses to be built by private enterprise in Melrose-ave.

Blackburn.—Governors of St. Mary's College received approval for erection of six new classrooms, two laboratories, cloakroom and assembly hall. (Headmaster, Father Philip Graystone.)

Blyth.—Newcastle Breweries, Ltd., Haymarket, Newcastle-on-Tyne, seek building licence for proposed public-houses at Cowpen. Application supported by Blyth Corp. Architects, Mauchlen & Weightman, 12, Saville-row, Newcastle-on-Tyne.

Blyth.—TC to consider development plan for 11 acres in Crofton area, and building of 106 dwellings in blocks and shops, etc. BS, D. W. Foster.

Boldon (Co. Durham).—J. Prentice, builder, Sunderland, to erect eight houses at South Vents, Whitburn.—J. T. Vasey, West Park-rd., Cleadon, plans erection of houses on 2.2 acres of land south of Woodlands-rd., Cleadon.

Bradford.—TC to invite tenders for Phase 3 of Margaret MacMillan Memorial Training College, £85,000 est.

Burnley.—EC to reserve sites for new nursery schs. in Brunshaw and Whittlefield areas.

Carlisle.—TC approved plans, 31 houses and nine bungalows at Stanwix, for James Millar & Sons, Ltd., 15, London-rd., Carlisle. Architect, G. F. Danson, 54, Lowther-st., Carlisle.—Propose erection of 550 houses, adjacent to Wigton-rd.

Chester.—TC to prepare scheme for new abattoir at Bumpers-la.; received allocation 200 houses for 1954, and to invite tenders for erection for first 150.

Chesterfield.—BC to invite tenders for 15 aged persons' bungalows at Pevensey estate; received approval for erection of 292 houses and to seek approval for further 158.

Chester-le-Street.—RDC to build 19 traditional houses on Pelton housing estate. Council's A, F. Bowman, Estate Office, Birtley, Co. Durham.

Cockermouth.—North-Eastern Hsg. Assoc., Curzon House, Maryport, to erect 20 houses on vacant sites at Slatefell.

Coventry.—Work to commence in late 1954 on first stage of civic theatre, £180,000 est. Plans by City A. —Work to commence in September, 1954, on erection of Herbert Art Gallery, £250,000 est. Architects, Anthony Herbert, Leicester.—Work to commence shortly on erection of British Home Stores in City Centre. Architects, G. Coles, London.

Durham.—CC considering sites at Framwellgate Moor for erection of jun. sch. Cty. A, G. R. Clayton, Court-la., Durham.

Durham.—CC to carry out alterations to Hunter House Farm, Seaton Carew. Plans by Cty. A, Court-la., Durham.

Glendale.—RDC will let contracts during 1954 for erection of 90 houses including 70 at Westwood-ave., Wooler, 16 on Poor Law Institution site and four at Bowsden. S, A. R. Field, Council Offices, Wooler, Northumberland.

Great Budworth (Cheshire).—PC Council of Parish Church to raise £17,000 for overhaul and repair of church.

Hoole.—UDC received approval for 30 houses in 1954 at Hoole House estate.

Houghton-le-Spring.—UDC to prepare plans for 220 houses. S. W. H. Smith.

Huddersfield.—EC propose textile department at Technical College in 1954-5 programme.

Ince-in-Makerfield.—UDC to prepare layout for housing site at Cemetery-rd.

Jarrow-on-Tyne.—J. M. Black, Ltd., builders, Glen-st., Hebburn, plan erection of six houses in York-ave. area.

Kettleshulme (Derbys).—C of E Auths. (Rev. M. J. B. Henry) propose new church.

Lancaster.—Work to commence in spring on improvements to Ripley C of E sch. for Governors, £90,000 est.

Leeds.—TC to negotiate with Myton, Ltd., Clough-rd., Hull, for erection of 176 dwellings at No. 2 area, Tinshill estate.

Longridge.—UDC received allocation of 30 houses for erection at Keston-la. site.

Manchester.—Reg. Hospital Brd. approved schemes for new chest clinic at Marsden Hospital, Burnley; conversion of Aldington Hall as continuation hospital.

Middlesbrough.—TC obtaining fresh tenders for

erection of 22 houses on **Park End** housing estate (First Development, Group 28). BE, J. A. Kenyon.

Middlesbrough.—Turner & Ing, 71, Linthorpe-rd., appointed quantity surveyors, and Cairns & Byles, 2, Osborne-rd., Newcastle-on-Tyne, consultant engineers, by EC, for proposed Middle Beck No. 2 cty. sec. sch.

Middlesbrough.—C of E plan construction of churches and halls on Thorntree estate and at Berwick Hills.

Middlesbrough.—BE preparing detailed plans for first group of shops to be built on Berwick Hills housing estate.

Newcastle-on-Tyne.—H. Gatoff, Trafalgar-st., architect for furniture store in City-rd., for E. Kahn & Co., Ltd.—S. W. Milburn & Partners, 9, Esplanade, Sunderland, prepared plans for workshops and sanitary accommodation at Pandon Bank, City-rd., for McEwan & Co., Ltd.—J. T. Stephenson, Kensington Hotel, Osborne-rd., architect for 32 houses proposed to be erected in Bosworth-gdns., by Westgate Self-Build Assoc.—RC church, St. Roberts, to be built in Cedar-rd. and Belbee-rd., for Rev. J. Leavy. Architect, Robert Burke, 10, Lambton-rd., Newcastle 2.—Amended plans for warehouse in Blenheim-st., for N. Baker, approved. Architect, C. Solomon, St. Mary's-pl.

Northumberland.—EC approved final plans for proposed Killingworth cty. gram. sch., cost £141,000, including £116,800 for building work. Cty. A, C. C. Brown, Newcastle-on-Tyne.

Oldbury.—TC propose houses at Stone-st. and Lodge-st.

Oswestry.—TC to invite tenders for erection of 74 houses. S. E. J. Taylor.

Richmond (Yorks).—RDC seek loan sanction for erection of six houses at Gilling, 154 houses at Colburn and 74 at Hipswell.

Rochdale.—TC approved layout for 122 houses at Alder-rd. estate, Castleton.—Approved amended plans for RC Church at Mornington-rd., Kirkholt, for Rev. Father M. Murphy.

Rowley Regis.—TC approved plans, store building at Gawme-la., Old Hill, for Harris Lifting and Shipping Tackle Co., Ltd.—Grit and grading plants at Portway Quarry, Rowley, for T. & S. Element, Ltd.—Store at Hainge-rd., Tividale, for B. Bird & Co., Ltd.

Scarborough.—TC propose further 213 houses at Eastfield estate and 27 houses on small sites in town in 1954. £390,000 est.

Scarborough.—Scarborough College, Ltd., to use house in Filey-rd. as extension to college.

Seaham.—UDC has been allocated 150 houses for 1954. 120 will be erected by direct labour on Westlea estate and 30 by direct labour in Daphne-cres.—UDC to obtain tenders for erection of 50 new-traditional houses. Council's S. A. M. Smith, Cliff House, Tempest-pl., Seaham.

Skelmersdale.—UDC received allocation of 20 houses for 1954 programme.

South Shields.—TC making further application for permission to carry out additions to town hall, est. cost £80,000. BE, John Reid.—South Shields AFC bought Simonside Hall and grounds for provision of sports stadium.—Wright's Biscuits, Ltd., applied to BC for two-acre site for factory extensions. Plans not prepared yet.—TC approved plans for welfare and maternity clinic hall and ambulance stn. to replace centre in Westoe Village. Est. cost over £30,000. Plans by BE.

Startforth (Yorks).—RDC considering erection of houses at Hutton Magna. Council's A. H. B. Richardson, 3, Skinnergate, Darlington.

Stockport.—TC approved plans for new licensed premises at Craig-rd., for Hydes Anvil Brewery, Ltd., Manchester.

Stockton-on-Tees.—TC to discuss with Middlesbrough TC the provision of crematorium to serve both towns.—South Durham Steel & Iron Co., Ltd., to erect office block at tank department.—G. P. Stainsby, 57, High-st., Stockton, prepared plans for four houses in Coxwold-rd., for G. Hope, Ltd., builders, and 12 houses in Kilburn-rd., for Exors of A. Curry.—TC received outline application from R. B. Bainbridge, builder, High-st., Stockton, for housing developments on 48 acres of land near Green-la.

Stoke-on-Trent.—TC approved plans for 38 houses at Plex-st. and Clay Hills, Tunstall.—TC received consent to borrow £178,179 for first instalment of College of Ceramics at North Staffordshire Tech. Col., and £196,603 for erection of Blurton/Newstead cty. sec. sch.

Stokesley.—RDC to let contracts this year for 48 houses including 20 at Great Ayton, 16 at Ormesby, eight at Yarm and four at Stokesley.

Sunderland.—TC recommended by Seaside Development Com. to spend £21,600 on first stage of seafront development scheme, total cost £56,000. Boro' A. H. C. Bishop, Grange House, Stockton-rd., Sunderland.

Sunderland.—Northern General Transport Co., Ltd., Gateshead, settling final details with Sunderland TC regarding plans for garage and bus stn. in Park-la. It is expected that the work will go ahead shortly. Architects, Fennell & Co., Bridge End-chbrs., Chester-le-Street.

Sunderland.—Welfare Com. recommended TC to acquire premises for conversion into home for 30 old people. BE, J. E. Lewis.

Tamworth.—TC to negotiate with Drury & Co., Ltd., Wellingborough, for erection of 100 dwellings at Gillway estate.

Thornaby-on-Tees.—T. J. Newton (Structural Engineers), Ltd., Thornaby, offered site by TC at Corporation depot for erection of business premises.—TC to carry out alterations and additions to civil defence control centre.

Tynemouth.—TC submitted to Home Office £14,000 scheme for civil defence control centre and police control centre. BE, D. M. O'herlihy, 16, Northumberland-sq., North Shields.

Wallasey.—Liverpool Reg. Hospital Brd. to invite tenders shortly for extensions to Victoria Central Hospital, £100,000 est.

Wallsend.—Co-op. Soc. propose dairy and garage on land in West-st., Wallsend.

Warrington.—Work to commence next year on erection of public-house, "Ring o' Bells," junction of Longshaw-st. and Crosby-ave., to replace existing "Ring o' Bells," due to be demolished under Wilderspool Crossings Bridge Scheme.

Warrington.—Padgate Methodist Church propose restoration of this church.

Whitley Bay.—H. L. Honeyman, 6, Eldon-sq., Newcastle-on-Tyne, architect for proposed church hall at St. Peter's Church, Monkseaton.—C. Solomon, St. Mary's-pl., Newcastle, prepared plans for dairy at Hills Head-rd., for Coast Creamery, Ltd.

Wigan.—RDC to negotiate tender with J. W. Liptrot & Co., Ltd., for erection of 32 houses, and to invite tenders for 20 flats at Shevington estate.—Received allocation for 68 houses in 1954.

Wigton.—Cumberland Motor Services, Ltd., Whitehaven, to acquire old fire stn. site in King-st., on which to erect bus stn.

Woking.—Agreement has been reached by authorities concerned on outline scheme for town development in Woking UD under Town Development Act, 1952 (West Byfleet Golf Course, The Hermitage land and other areas to be regarded as an entity for the purposes of scheme which envisages a total of up to 2,000, but not less than 1,750, council houses, one-quarter of which would be reserved for Woking and the remainder for Surrey Metropolitan Authorities, including Wimbledon. Shops, schools and other amenities will be provided. An area of about 30 acres to be set aside for industry. Building expected to start at beginning of 1955 or earlier.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

Barnsley.—Houses at Athersley North estate, for TC: *M. J. Gleeson, Ltd., Sheffield, £5,351 (4); *Arthur Dunk, Ltd., 39, Farrar-st., Barnsley, £12,123 (8); *C. D. Potter & Sons, Ltd., 119, Doncaster-rd., Barnsley, £26,806 (18); *M. Harrison & Co. (Leeds), Ltd., £204,138 (146), "Unity."

Berkshire.—Erection of four police houses, for CC: *W. F. Pratley & Sons, of Oxford, £6,873 (amended tender).

Billingham-on-Tees.—Erection of 109 houses for UDC. Architects, Kitching & Co., 21, Albert-rd., Middlesbrough: *C. M. Yuill, Ltd., Villiers-st., West Hartlepool, £150,143.

Blyth.—Erection of eight bungalows in Barras-ave.: *Plessey Building Association, 10, Fifth-ave., Blyth.

Boldon.—Erection of medical centre at Boldon Colliery, for the Durham Divisional Coal Brd. Architects, George T. Brown & Son, 52, Fawcett-st., Sunderland: *Gordon Durham & Co., East Boldon, Co. Durham.

WOOD BLOCKS
FOR HOUSING
"B" GRADE FLOORS IN
OAK
GURJUN
IROKO
etc.
1" nom. **17/6** *per yd.*
DELIVERED TO VAN AT MILL
approx. **25/-** *per yd.*
LAID COMPLETE
VIGERS BROS.
LTD.
LUDGATE BROADWAY
LONDON EC4 CIT. 2111

Bolton.—Alterations and extensions at the Clarence Hotel, Bradshawgate, for Magee Marshall & Co., Ltd.: *W. Townson & Sons, Ltd., Swan-la., Bolton.

Carlisle.—Extensions to works at Kingsmoor-rd., for J. K. Innes & Co., Ltd.: *Direct Labour.

Chester.—Eight houses at Thornton-le-Moors, for RDC. T. Eaton, ARIBA, 16, White Friars, Chester: *L. O. G. Williams, Meadow Bank, Elton.

Chester.—Stage 1 of College of Further Education, for EC: *Thos. Warrington & Sons, Ltd., 84, Station-rd., Ellesmere Port, £92,481.

Darlington.—Erection of personnel block for Whessoe, Ltd., engineering contractors. Plans by the firm's own staff. Quantity surveyors, J. P. Allen & Hill, Tankerville-ter., Newcastle-on-Tyne: *Bovis, Ltd., 1, Stanhope-gate, London, W1, £18,000.

Darlington.—Erection of pickling shop 405 ft. long, 62 ft. wide, and 40 ft. high, for Whessoe, Ltd. Steelwork contractors: *Redpath Brown & Co., Edinburgh.

Daventry.—Houses for RDC:—Four at Flore: *A. & F. Gale, Ltd., Kingsthorpe, Northampton, £4,280; eight at Flore: *A. & F. Gale, Ltd., Kingsthorpe, Northampton, £10,276; six at Lilbourne: *Haynes & Sons, Ltd., Daventry, £8,147; 14 at Woodford: *Adkins & Cooper, Ltd., Staverton, £19,013.

Harpenden.—56 houses on Batford (South) estate, for UDC:—

C. Miskin & Sons, Ltd., St. Albans	£92,730
David Nott & Sons, Luton	89,378
David Chaston, Ltd., Hoddesdon	87,320
E. C. & F. H. Jarvis, Ltd., Harpenden	82,919
*Dorset Building Contractors, Ltd., 11, Compton-ave., Brighton	78,277

Haslingden.—Seven houses and eight flats at Longshort housing estate, for BC. James Mason, MIMunE, DipTP, BE&S: *L. Frankland (Contractors), Ltd., Antley-bldgs., Blackburn-rd., Accrington.

Holyhead.—Erection of 148 houses in the Turkey Shore area, for UDC: *John Laing & Co., Ltd., £234,496 (subject to MOW&LG approval).

Jarrow-on-Tyne.—A building licence has been issued to Jarrow & Hebburn Co-op. Society, Ltd., for a bakery in Leam-la., Jarrow. Plans by the CWS Architects' Dept., 90, Westmorland-rd., Newcastle-on-Tyne: *CWS Building Dept., West Blandford-st., Newcastle, £85,000.

¶London (Air Ministry).—Contracts to value of £500 or over for fortnight ended January 2.

Building work: Woodcock, Marshall & Co., Ltd., 2, Westbourne Grove-mews, London, W11: Taylor Woodrow Construction, Ltd., Ruislip-rd., Southall, Middx: W. & J. R. Watson, Ltd., 81, Great King-st., Edinburgh, 3; William Thornton & Sons, Ltd., 38, Wellington-rd., Liverpool, 8; C. Syms & Sons, Ltd., London-rd., Calne, Wilts; Exeter Building Contractors, Ltd., 14, Dix's Field, Exeter, Devon.

Ventilating services: Richard Crittall & Co., Ltd., 151, Gt. Portland-st., London, W1. *Civil engineering*: Loakes and Pettit, Ltd., Bridge-st., Thrapston, Kettering, Northants. *Construction of servicing areas and access tracks*: Fitzpatrick & Son (Contractors), Ltd., 455, Old Ford-rd., London, E3. *Construction of maintenance apron*: M. J. Gleason (Contractors), Ltd., Woodseats, Sheffield, 8. *General maintenance work*: Cubitt and Gotts, Ltd., Station Works, Westerfield, Ipswich. *Resurfacing work*: Amey's Asphalt Co., Ltd., Sutton Courtenay, Abingdon, Berks.

London Airport.—Construction of the superstructure of the third large building in the central terminal area at London Airport, for the Ministry of Transport and Civil Aviation. The architect is Frederick Gibberd, CBE, FRIBA, MTPI. The main consulting engineers are Sir William Halcrow & Partners. G. M. Buckle & Partners are consulting engineers for heating, and Ewbank & Partners, Ltd., for ventilation: *Taylor Woodrow Construction, Ltd.

London (British Railways).—Contracts placed by London Midland Region. Renewal of the engine shed roof with patent roof glazing at Walsall motive power depot, *Mellowes & Co., Ltd., Corporation-st., Sheffield. Hire and erection of scaffolding for the renewal of the roof coverings at Rugby Midland station, *Scaffolding (Great Britain), Ltd., 28, Pickford-st., Birmingham 5. Renewal of a portion of the engine shed roof at Southport motive power depot, *G. & J. Seddon, Ltd., Coronation-bldgs., Little Hulton, Walkden, nr. Manchester. Removal of track, bridges, etc., on the Aspatria-Mealsgate line, *Thos. W Ward, Ltd., Albion Works, Sheffield. Renewal of the roof with protected metal roof decking over platforms Nos. 1 and 2, Pall Mall side, at Liverpool Exchange station, *Robertson Thain, Ltd., Ellesmere Port, Wirral, Cheshire.

LCC.—Erection of 9 blocks of flats and houses on the Upper Tulse Hill (North) estate, *Rush & Tompkins, Ltd., 109, Station-rd., Sidcup, £230,000. Erection of 19 blocks of dwellings, community centre blocks, etc., at the Sydenham Hill site, Lewisham and Camberwell, *Rush & Tompkins, Ltd., £895,500. Erection of 8 blocks of flats (160 dwellings) and 47 houses on the Kingswood estate, Camberwell, *Rush & Tompkins, Ltd., £460,000.

London (Metropolitan Police).—Contract placed by Metropolitan Police. Improvements to kitchen and canteen at Woolwich Police Station, *Chas. E. Gee & Co., Ltd., £987.

¶London (War Dept.).—Contracts placed by WD during week ended December 19:—

Leicestershire: Building, The Butterley Co., Ltd., Ripley. *Hampshire*: Building, Campbell & McGill, Ltd., Winchester. *Oxfordshire*: Building, The Butterley Co., Ltd., Ripley. *Hampshire*: Floor repairs, Vigers Bros., Ltd., London, EC4. *Shropshire*: Building, J. Gerrard & Sons, Ltd., Swinton. *Merionethshire*: Road repairs, Constable Hart & Co., Ltd., Cardiff. *Brecknockshire*: Floor repairs, Noel T. James, Ltd., Newport. *Cheshire*: Floor

repairs, Morton Browne, Ltd., Chester; Building work, W. H. Roberts (Builder and Contractor), Ltd., Birkenhead. *Renfrewshire*: Building work, John Woodrow & Sons (Builders), Ltd., Bridge of Weir.

London (War Dept.).—Contracts placed by WD during week ended December 26:—

Renfrewshire: Fire hydrants, Robert M. Gibson & Co., Ltd., Glasgow. *Inverness-shire*: Building, J. B. Stewart & Sons, Coupar Angus. *Wiltshire*: Miscellaneous, Downing Rudman & Bent, Ltd., Bulford. *Hampshire*: Miscellaneous, Bagshaw & Sons, Ltd., Southampton; Fencing, Penfold Fencing & Engineering, Ltd., Watford. *Cheshire*: Building work, W. H. Roberts (Builder & Contractor), Ltd., Birkenhead. *Northumberland*: Miscellaneous, Tate & Holmes, Ltd., Newcastle-on-Tyne. *Middlesex*: Hutting, re-cladding, Maurice Hill, Ltd., Havant.

Middlesbrough.—Erection of 50 houses at Park End, for TC. BE, J. A. Kenyon: *E. Lowe (14); *J. Cresswell (10); *S. Lowe (14); and *F. S. Thornton (12). (All local firms.)

Middlesbrough.—Erection of 28 houses on the Park End housing scheme, for TC. J. A. Kenyon, BE: *H. Halliman, Middlesbrough, £37,560.

Newcastle-on-Tyne.—Alterations and new shopfront at 108-10, Grainger-st., Newcastle-on-Tyne, for G. M. Brown, Ltd.: *James White (Shopfitters), Ltd., Team Valley Trading Estate, Gateshead.

Newcastle-on-Tyne.—Erection of 60 houses and 24 flats on small vacant sites, for City C. City A, G. Kenyon, 18, Cloth-market, Newcastle: *G. Bainbridge, 205, West-rd., Newcastle, for nine houses and 12 flats; *J. H. Fisher & Co., Ltd., Kenton-la., Newcastle, 22 houses; *E. Jeffcock, Ltd., 107, New Bridge-st., Newcastle, 29 houses and 12 flats.

Oakengates (Salop).—Erection of pithead baths installation at Granville colliery, for NCB (West Midlands Division): *John F. Hughes, Ltd., Wolverhampton, £103,186.

Oswestry.—Erection of a new memorial hall at Oswestry sch.: *E. W. Gittins & Sons, Foundry-bldgs., Johnstown, Wrexham.

Richmond (Yorks).—Erection of 12 houses at Melsonby, for RDC. Plans by S. 56, Market-pl., Richmond: *R. Dodds & Son, Melsonby, £15,575.

Salisbury (Wilts).—Erection of four shops and flats and 10 garages at Westwood, for TC: *R. A. Moulding & Sons, South Newton, Wilts, £13,123.

Salisbury and Wilton (Wilts).—Works for RDC.—16 houses and site works at Barford St. Martin: *Reema Construction, Ltd., £23,199; six bungalows at Whiteparish: *Turner & Singleton, £7,747.

Southwark.—Erection of 84 houses in eight blocks at Doctor-st. (Stage 1), for BC. *Rush & Tompkins, Ltd., 109, Station-rd., Sidcup, £150,809.

Stockport.—Alterations and extensions at Thomas-st. and Walton-st., for T. & J. Smith, Ltd.: *Direct Labour.

Totnes.—Construction of attested section of the Cattle Market, for TC: *T. Brook & Co., Ltd., £1,749.

Walsall.—Four almshouses at Sandbank and seven at Dudleys Field estate, for TC: *W. Clare, Ltd., Portland-rd., Aldridge, £4,838 and £8,638.

Whitley Bay.—Work is in hand on showroom and offices in Cauldwell-la., Monkseaton, for R. Wilson (Monkseaton), Ltd., motor engineers: *J. M. Dawson, Ltd., Ilfracombe-gdns., Whitley Bay.

FEDERATION OF MASTER BUILDERS

UNITE FOR STRENGTH

The NORTH WEST REGION *covers* **LANCASHIRE, CUMBERLAND WESTMORLAND, CHESHIRE and NORTH WALES**

Membership open to all bona fide builders and contractors

ANNUAL SUBSCRIPTION **£5 : 5 : 0**

COMPREHENSIVE SERVICE OF TRADE NEWS. PROMPT AND PERSONAL ATTENTION TO ALL PROBLEMS.

Further information from:

Regional Secretary
Federation of Master Builders
Williams Deacon's Bank
Chambers, Birkdale, Lancs.
Tel.: Southport 68129

Branches:
Anglesey, Bolton, Manchester, Merseyside, Mid-Cheshire, Oldham, Stockport, Widnes and Runcorn, Wigan, Wirral

CHANNELS by **BROADS** for **TECHNICAL SERVICE**
Phone: PADdington 7061 (20 lines)
Write: SOUTH WHARF, PADDINGTON, W.2

STEEL-CRETE
SUPER-HARD DUSTLESS SURFACES
HAVE BANISHED ALL TROUBLES WITH OLD OR NEW
FLOORS
Inspect one that has withstood **HEAVY TRUCKING FOR 30 YEARS**
and consult
STEEL-CRETE LTD.
Savoy House, 115/116, Strand, London, W.C.2
Tel.: Temple Bar 5621

THE ESSEX STEEL SCAFFOLDING Co LTD
SALES, HIRE
ERECTION
CRADLES
9A HIGH BEECH ROAD
LOUGHTON ESSEX
TEL: LOUGHTON 5022

Boyle's Patent "Air Pump" **Ventilator**
OVER TWO MILLION IN USE
ROBERT BOYLE & SON
VENTILATING ENGINEERS
98 HERRIES STREET, KILBURN LANE, W.10
Tel.: LADbroke 2879

WOOD BLOCK FLOORS
STEVENS & ADAMS LTD.
Victoria Works,
Point Pleasant, Wandsworth, S.W.18

W & M NEGUS LTD
Building Contractors
Station Works, King James St., Southwark, S.E.1
Telephone:— Waterloo 5474 (3 lines)

GALBRAITH
BROTHERS LIMITED
BUILDERS
CONTRACTORS
& ENGINEERS
Registered Office: 61 BARTHOLOMEW CLOSE E.C.1 MONarch 7597-8
Works: CRAYFORD BRIDGE KENT Bexleyheath 5651-4